UNIVERSITY MICROFILMS
313 N 1ST ST
ANN ARBOR, MICH

COAL MINING

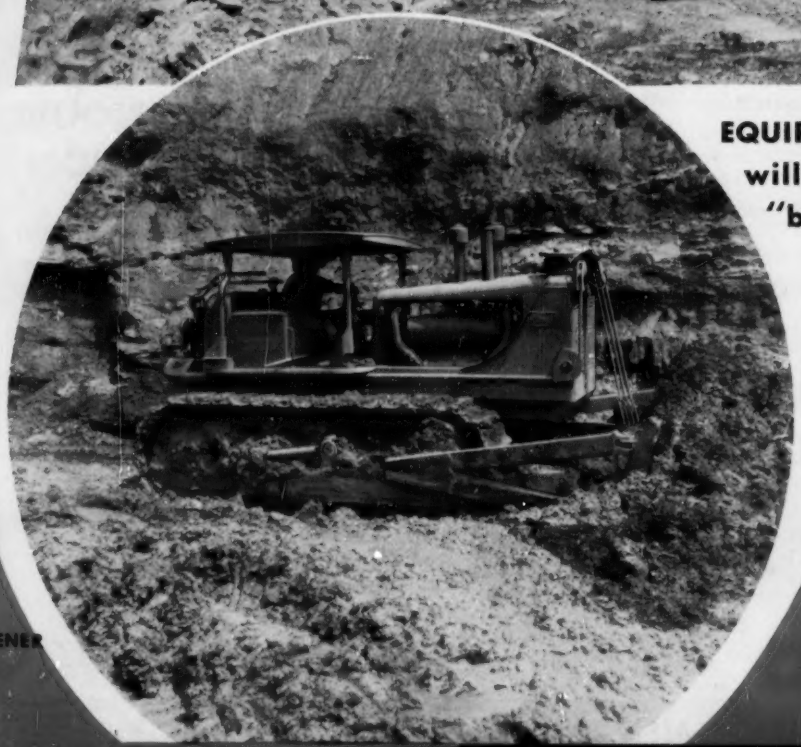
JANUARY, 1954

published by Modern Mining Publishing Co.
4575 COUNTRY CLUB DRIVE • PITTSBURGH 27, PA.

VOLUME 31, No. 1

Mine More in '54

Lima 2400 Shovel at COAL RIVER MINING COMPANY near West Milford, W. Va.



Allis-Chalmers H-D 20 at RUSSELL CRAVENER MINING CO., Kittanning, Pa.

EQUIPMENT FROM HIGHWAY will help you "meet" and "beat" competition

Business experts predict that '54 will see a quickening of competition in virtually every industry.

That's why it will pay you to make sure now that your equipment is producing the most—at the lowest possible cost.

Highway's trained equipment engineers will be happy to share your production problems . . . to advise you how you can mine more and make more in '54.

Highway EQUIPMENT COMPANY
6465 Hamilton Ave. • Pittsburgh, Pa.

ALLIS-CHALMERS • JAEGER • BAKER • GAR WOOD • HOUGH • MASTER • THOR • WAYNE CRANE • GENERAL MOTORS DIESEL ENGINES • LIMA SHOVELS, CRANES, DRAGLINES • ERIE BINS

Nothing on the Market Matches

JOY SULMET CUTTER BITS

WHEN IT COMES TO CONQUERING TOUGH SEAM CONDITIONS

JOY Sulmet Tungsten Carbide Cutter Bits can cut faster and at less cost per ton of coal than any other bit on the market—*facts proved by actual operating records from many different mining areas and under widely varying seam conditions.* An exclusive Joy feature—the use of a protective cap over the tungsten carbide insert—reduces bit breakage and practically ends insert loss. Sulmet Bits are available in eight cutter styles, including a design for the Bowdil ML Chain, plus auger and finger bits for Coal Drills.

● *Let us show you what they can do for you.*

AGAIN SULMET BITS PROVE SUPERIOR

THE PROBLEM: A Western Pennsylvania mine has sulphur streaks, 1" to 6" thick, running throughout the seam. Hard clay veins occasionally obliterate the coal for two or three cuts. Both an undercut and shear cut were used, and shearing through these impurities caused so much wear that cutting time per shift was greatly reduced by frequent bit changing.

THE SOLUTION: A test run was made on their Universal machine with 125 Sulmet SMB Bits (see above). After four weeks of operation, three shifts a day, the test was considered complete, although 89 bits still had a life expectancy of two or three weeks. Even if all were considered worn out, bit cost would be only $.026 per ton of coal. Also, cutting speed had increased tremendously since all bit-changing could be handled between shifts.

See the Joy Film: "Sulmet Tungsten Carbide Bits" 16 mm · Sound · Full Color · 40 Minutes
Write our Film Booking Office for free showing

Consult a Joy Engineer

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

McCarthy drills CUT DRILLING COSTS

BLAST HOLE DRILLS

At Bessemer Limestone and Cement Co., Bessemer, Pa., one McCarthy Blast Hole Drill, like the one pictured below, averaged 90 ft. an hour, working through a hard blue shale facing 34 ft. deep. Holes were drilled on 18 ft. centers. Two men handled the whole job, including set-up and moving. Bessemer officials were so pleased with the performance of the McCarthy Drill that a second one was ordered and put to work in another section of their quarry. It, too, is breaking all previous records for fast, low-cost shot hole drilling.

COAL RECOVERY DRILLS

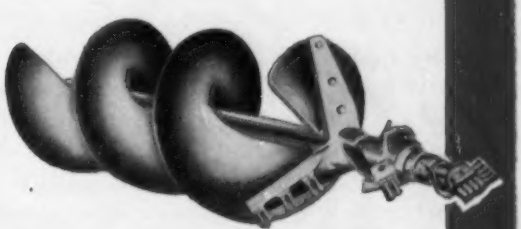
McCarthy 36" Coal Recovery Drill

Near Salineville, Ohio, a three-man crew, operating a McCarthy Coal Recovery Drill, similar to the one shown above, produced 90 tons of clean, high-grade and profitable coal in one eight-hour day. At Germano, Ohio, a three-man crew, using a 36" diameter auger section, produced 167 tons of coal in one eight-hour day!

Hydraulically controlled and operating on gasoline, diesel or electric power, rugged McCarthy Coal Recovery Drills produce coal at $1.50 to $2.00 a ton, including amortization of investment cost. You can select from four models . . . 20" to 24", 30" to 36", 42" and 48" diameters with 4-ft. to 24-ft. auger sections. Write Salem Tool direct and a distributor will call on you.

Heavy Rugged Powerful

McCarthy Model 106 Vertical Drill

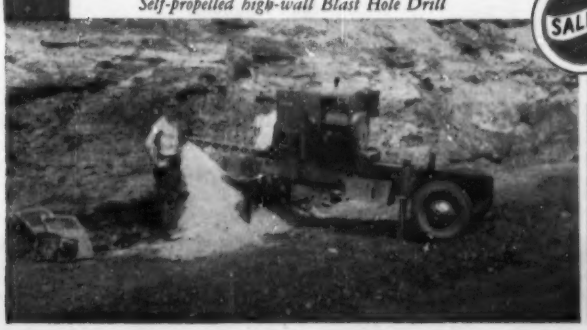


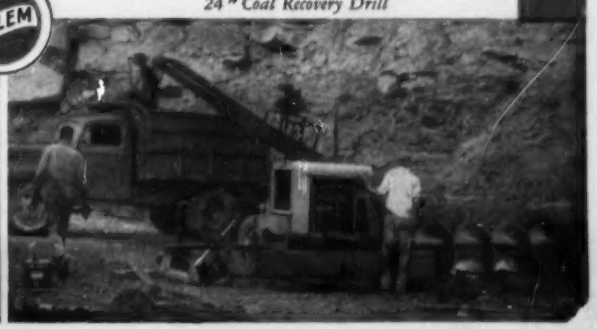
THE SALEM TOOL COMPANY

763 S. ELLSWORTH AVE. SALEM, OHIO, U. S. A.

Self-propelled high-wall Blast Hole Drill

24" Coal Recovery Drill





Published monthly by Modern Mining Publishing Company. Publication Office—Advance Printing & Litho Co., Erie, Pa. Editorial and Executive Offices—4575 Country Club Drive, Pittsburgh, Pa., P. F. JASIK, Publisher & Editor. Price: In the United States, $2.00 per year; all other countries, $5.00. Single Copy, 50 cents. Entered as second-class matter at the Post Office at Pittsburgh, Pennsylvania, under the act of March 3, 1879. Application for reentry applied for at the Post Office at Erie, Pennsylvania.

How New Mexico copper mine speeds tractor work

One Tournatractor clears rock from highway.

The other cleans pit floor around shovel.

WITH mostly rock to handle on a 6-day week, year-round basis, a large open-pit copper mine in New Mexico uses 2 Tournatractors as utility tools.

These rubber-tired tractors clean up around large stripping shovels. They also keep haul roads and highways clear of rock, traveling over pavement without damage. When mixed dirt and rock are encountered, one unit pulls a 20-yard scraper; the other, a Rooter. In spare time, Tournatractors do a wide variety of odd jobs, including stockpiling, unloading supplies, pushing railroad cars, etc.

Their chief advantage for this scattered work is their speed. They can go anywhere — across the pit floor or over pavement — at speeds up to 19 mph. With instant-shift transmission and 8 mph reverse, they work 2 to 3 times faster than crawlers on most pushing and pulling jobs.

See for yourself

We will be glad to demonstrate a Tournapull or Tournatractor in your pit. They're better tools than ever since Westinghouse Air Brake's quality manufacturing tradition has been added to LeTourneau's earthmoving leadership.

Tournatractor — Trademark
Tournapull, Rooter — Trademark Reg. U. S. Pat. Off. T-472-M-b

LeTOURNEAU WESTINGHOUSE

Insure your future with lowest-net-cost-per-yard LeTourneau-Westinghouse high-speed, rubber-tired tractors, self-propelled scrapers, rear and bottom-dump off-road haulers. Also save money on Carryall-Scrapers, PCU's, Rooters, Sheepsfoot Rollers.

FURNIVAL
Machinery Company
PHILADELPHIA (31), Lancaster Ave. at 54th.
HARRISBURG, 5105 Paxton Street
NEW PHILADELPHIA, On Water Street

4 miles from Arctic Circle — At Jumisko, Finland, 6 Tournarockers are hauling 400,000 yds of granite to excavate 4 miles of tunnels for water power. During winter, temperatures drop to 40° below, but Tournarockers operate 24 hours a day. With their 13 ft 9 in. turn radius, they maneuver easily in the 20 ft tunnels.

Stripping for steel — To meet a vastly increased demand from the steel industry, Kelley Island Lime & Transport Co., Cleveland, works 2 C Tournapulls 16 hours per day stripping limestone. The 2 units combined remove 418 bank yds of rocky loam overburden per 50-min hour. Average cycle: 2200 ft. No. trips per hour per unit: 19.

Economical on 700 ft push — Replacing 2 crawler-tractors for Marietta Concrete Corp, Marietta, Ohio, Tournatractor pushes sand and gravel 50 to 700 ft to dragline for loading. Because this rubber-tired unit dozes at 3½ to 8 mph, it equals output of both big crawlers which could work no faster than 1 to 2 mph.

Tires outlast tracks 4 to 1 — Because tracks on their crawler had to be replaced every 650 to 900 hrs, Miami Crushed Stone Co, Florida, bought this Tournatractor to handle stockpiling and maintenance. In 9 months, Tournatractor worked 3800 hours — still had original tires. In 12 months, crawler worked only 2600 hours. Part of crawler's lower working total was due to downtime for track repair and maintenance. Also, crawler frequently was idle because it could not economically move to handle scattered jobs. Tournatractor, with 19 mph speeds, crossed pit, did work, returned before crawler would get ¼ mi to crossroad. Tournatractor also boosted production ... pushing sand 150 ft, made 2 passes to crawler's 1 ... pulling rail cars, moved 20 loaded or 45 empties.

Tournapull, Tournarocker — Reg. U. S. Pat. Off.
Tournatractor — Trademark Pic-484-Q-b

A. T. GREEN Machinery Company
Route 8
GLENSHAW (Pittsburgh), PA.

WEST VIRGINIA Tractor & Equipment Co.
P. O. Box 473
CHARLESTON 22, WEST VA.
BRANCH: P. O. Box 587
CLARKSBURG, WEST VA.

BOWDIL PRODUCTS

HELP YOU GET MORE $$$ FROM THAT MINE OF YOURS

PATENTED CONCAVE ▶ SHAPE STAYS SHARPER LONGER

Patent No. 2,217,347

NEW 1-29 CONCAVE BIT!

CONCAVE SHAPE STAYS SHARP AS IT WEARS AWAY. THAT MEANS

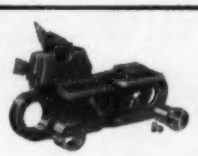
1. EASIER CUTTING
2. FASTER CUTTING
3. COARSER CUTTINGS
4. MORE PROFITABLE STOKER
5. LESS BUG-DUST
6. LESS DRAG
7. LESS POWER CONSUMED
8. LESS DOWN TIME
9. LESS MAINTENANCE ON MINING MACHINES

. . and the double point doubles your savings!

BOWDIL CUTTER BAR

Bowdil Cutter Bars are designed for extra strength and power saving. Rivet-free body, Z bar construction, wide wearing strips make it the sturdiest bar in mining. Bowdil Bars are standardized to fit all coal mining machines.

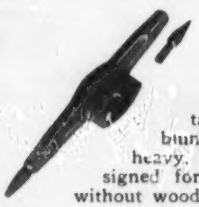
FABRI-FORGE CHAIN



Lower your operating costs with Bowdil Fabri-Forged Chain. Rugged, easy to maintain, the drop-forged lug body stands up under heavy wear with breakage practically eliminated. A major improvement is the true-running radial track guide.

BOWDIL FAST ROPE SOCKET

You can save time with the Bowdil Rope Socket . . . takes just two minutes to install. No tools necessary. High tensile-strength steel and patented design give maximum strength.



REPLACEABLE POINT MINER'S PICK

With a Bowdil Miner's pick, it only takes a few seconds to replace a dull, blunted point with a sharp one. Light or heavy, Bowdil pick heads are perfectly designed for weight and balance; come with or without wood handle.

DETACHABLE JAW SPIKE PULLER

Small, easy to handle . . . pays for itself many times over. Detachable jaws make it possible to replace claws without delay. The special construction pulls spikes without bending them.

SPROCKETS FOR ALL MINING MACHINES

Bowdil Sprockets are made from special heat-treated alloy steel and designed for hard wear. Our stock of over 100 different styles includes clutch, spline and keyed types—various tooth designs of 4 to 13 teeth.

WANT SOMETHING SPECIAL? BOWDIL CAN BUILD IT

Bowdil has the staff and facilities to work with you on any custom building or rebuilding, engineering, machining, fabricating. Excellent heat-treat equipment. If you have a problem, bring it to Bowdil.

◀ BATTERY OPERATED MINE LOCOMOTIVE DESIGNED AND BUILT BY BOWDIL

SALES ENGINEERS IN—Whitesburg, Kentucky—West Frankfort, Illinois Charleroi, Pennsylvania — Denver, Colorado — Big Stone Gap, Virginia Danville, West Virginia — Canton, Ohio — Birmingham, Alabama Helper, Utah—Kansas City, Missouri—Centerville, Iowa—Topeka, Kansas New Castle, England — Alberta, Canada

SALES AGENTS FOR *The Cincinnati* ELECTRIC DRILL

BOWDIL

COAL CUTTING EQUIPMENT

CANTON OHIO

BID WITH *Confidence!*

As a Caterpillar owner, you can bid the job with full confidence that the machines you own will do the work—for Caterpillar machines are *honestly rated.* You know exactly what rate of production to expect.

And you know that the performance of Cat equipment on the job is backed by efficient dealer service and daily-replenished parts stocks. Going time is kept high by prompt attention to *your* service needs—on your job or in the dealer's modern shops.

Bid your next job with confidence—with Caterpillar Equipment, with Caterpillar Dealer Service!

BECKWITH MACHINERY CO.

6550 HAMILTON AVENUE., PITTSBURGH, PA. • OLD TOWN ROAD, CLEARFIELD, PA. • EAST BROADWAY, FARRELL, PA.
361-369 CONGRESS ST., BRADFORD, PA. • 1356 E. 12TH ST., ERIE, PA. • BUCKHANNON PIKE, CLARKSBURG, W. VA.

OHIO MACHINERY CO.

6606 SCHAAF ROAD, CLEVELAND, OHIO • 930 KINNEAR ROAD, COLUMBUS, OHIO • 2807 REYNOLDS ROAD, TOLEDO, OHIO
U. S. ROUTE 250, CADIZ, OHIO • 4000 LAKE PARK ROAD, YOUNGSTOWN, OHIO

WALKER MACHINERY CO.

(Formerly Statewide Equipment Co.)
1545 HANSFORD STREET., CHARLESTON, W. VA. • 4010 EMERSON AVE., ROUTE #2 PARKERSBURG, W. VA.

CM-4

CATERPILLAR

LOOK TO THE DEALER FOR SERVICE TO BACK YOUR BID

BID EVERY LOAD A PAYLOAD WITH CATERPILLAR

With so many variables entering into job specifications, the only yardstick you have for determining a bid price is the ability of your equipment to produce.

That's why you have an upper hand when you bid a job with Cat Scrapers.

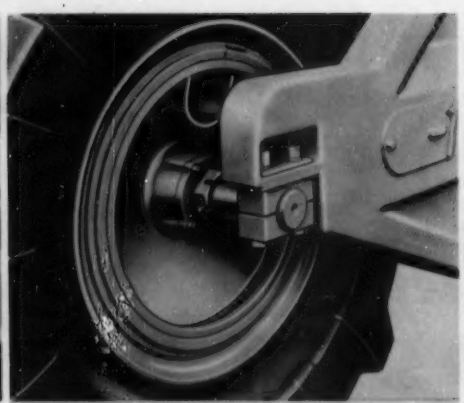
You can be sure that Cat Scrapers will carry capacity loads on each trip to the fill—the many advanced design features see to that. There will be no HP going to waste for Cat Scraper capacities are matched to accepted HP classes. Going time will be high, while costs will be low because of construction with sturdy materials and up-to-the-minute methods. And you can depend on the scrapers being ready to go on to your next job or bringing top trade-in prices on new ones.

Bid your next scraper job knowing that every load you haul will be a payload... bid your next job on Cat matched-to-power Scrapers.

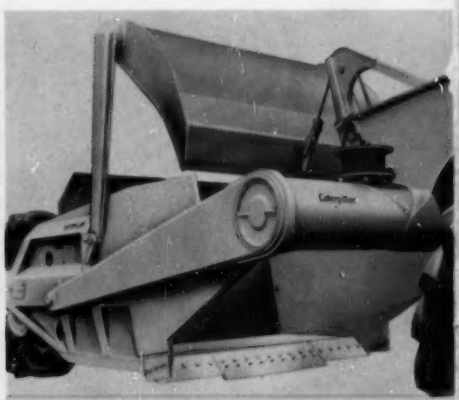
THESE SCRAPER FEATURES HEAP IN MORE LOW-COST YARDS!

- Open-top bowl permits overhead loading.
- Clean, smooth bowl interior—no obstructions to stop easy-flow of dirt.
- Double bowl bottoms reinforced by shock-absorbing T-section fillers.
- Push block is designed to transmit power from push-tractor direct to cutting edge.
- Low dead weight—alloy steels give strength without weight. Less tractor effort is required.
- Bowl arms pivot at engineered point to put tractor pull onto cutting edge.
- Low center of gravity greatly reduces danger of tipping on steep side hills or bank cutting.
- Large, tapered, precision-aligned inboard and outboard rear wheel bearings keep rolling effort at a minimum.
- Positive control of bowl lift permits spreading to exact job specifications.
- Hidden cables, protected from dirt, are easily reached for reeving.

Induction-hardened ball and socket joint connects gooseneck to front axle, permitting sharp turns in small area. Shims are removable as wear occurs.



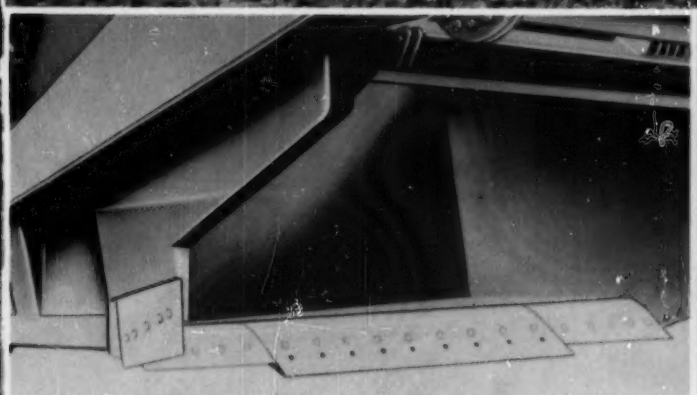
Rear axles are adjustable to compensate for tire wear, always assuring a level cut. Axles are supported on BOTH *ends to keep wheels vertical.*



Apron is lifted high to clear ejecting material by a concealed sheave system. Long apron arms are located OUTSIDE *the bowl for free action.*

	MODEL	NO. 90	NO. 80	NO. 70	NO. 60	NO. 40	NO. 20	NO. 21	NO. 15	NO. 10
HEAPED CAPACITY (Cu. Yds.)	Standard	27	20	10	9	4.5	20	20	12.5	9
	With Top Extensions	31	23	12.5	10.5	..	23	23	15	10.5
STRUCK CAPACITY (Cu. Yds.)	Standard	21.2	15	12	7	3.6	15	15	10	7
	With Top Extensions	25.5	18	15	8.3	..	18	18	12	8.3
	FOR USE WITH...	D8 or Tractors of 125 HP and Up	D8 or 100-130 HP Tractors	D7 or 75-100 HP Tractors	D6 or 60-75 HP Tractors	D4 or 40-60 HP Tractors	DW20	DW21	DW10	DW10

POWER-MATCHED SCRAPERS...

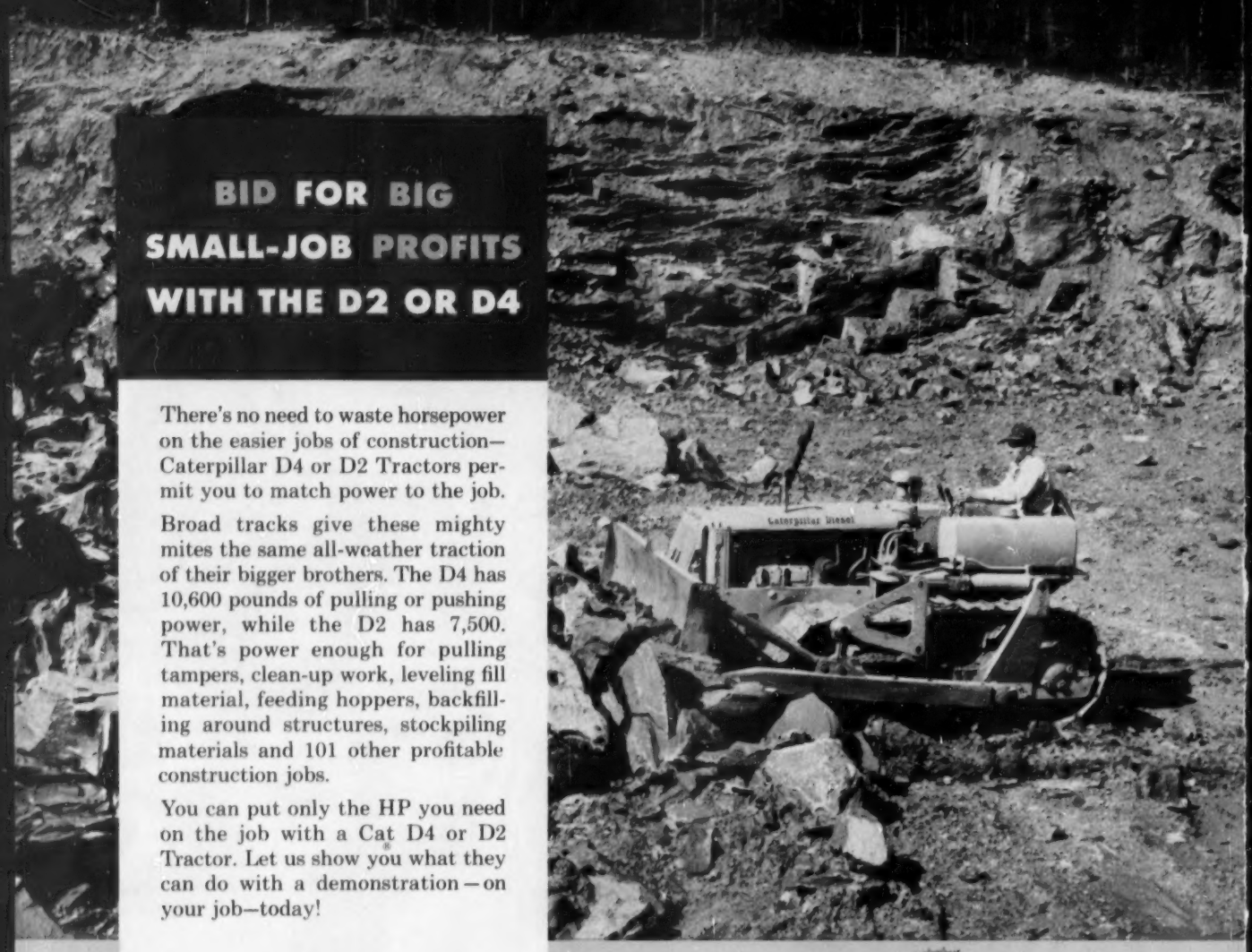


Hardfaced cutting edges are correctly angled to funnel material into every corner of the low, wide bowl for fewer voids, more pay yards.

Ejector plate moves forward all the way to the cutting edge, dozing ALL material from the bowl. Heat-treated rollers guide ejector, prevent binding.

CATERPILLAR

LOOK TO YOUR DEALER FOR PROOF OF PERFORMANCE.
HIS NAME IS ON FRONT AND BACK OF THESE PAGES . . .



BID FOR BIG SMALL-JOB PROFITS WITH THE D2 OR D4

There's no need to waste horsepower on the easier jobs of construction—Caterpillar D4 or D2 Tractors permit you to match power to the job.

Broad tracks give these mighty mites the same all-weather traction of their bigger brothers. The D4 has 10,600 pounds of pulling or pushing power, while the D2 has 7,500. That's power enough for pulling tampers, clean-up work, leveling fill material, feeding hoppers, backfilling around structures, stockpiling materials and 101 other profitable construction jobs.

You can put only the HP you need on the job with a Cat® D4 or D2 Tractor. Let us show you what they can do with a demonstration—on your job—today!

NAME THE DATE
WE'LL DEMONSTRATE!

CATERPILLAR®

BECKWITH MACHINERY CO.

8550 HAMILTON AVENUE, PITTSBURGH, PA. • OLD TOWN ROAD, CLEARFIELD, PA. • EAST BROADWAY, FARRELL, PA.
361-369 CONGRESS ST., BRADFORD, PA. • 1356 E. 12TH ST., ERIE, PA. • BUCKHANNON PIKE, CLARKSBURG, W. VA.

OHIO MACHINERY CO.

8606 SCHAAF ROAD, CLEVELAND, OHIO • 930 KINNEAR ROAD, COLUMBUS, OHIO • 2807 REYNOLDS ROAD, TOLEDO, OHIO
U. S. ROUTE 250, CADIZ, OHIO • 4000 LAKE PARK ROAD, YOUNGSTOWN, OHIO

WALKER MACHINERY CO.

(Formerly Statewide Equipment Co.)

1545 HANSFORD STREET, CHARLESTON, W. VA. • 4010 EMERSON AVE., ROUTE #2 PARKERSBURG, W. VA.

CM-4

COAL MINING

Vol. XXXI January, 1954 No. 1

Contents

Do You Know 8

Here and There in the Coal Industry 8

Resources For Freedom 9

Sixty-seventh Annual Meeting Coal Mining Institute of America 13

What Is The Scholarship Situation Today 15

Highwall Auger Mining in Northwestern Pennsylvania 17

New Equipment 22

Advertisers Index 28

Published Monthly By

MODERN MINING PUBLISHING COMPANY

Publication Office—1118 Chestnut St., Erie, Pa.

Editorial Offices—4575 Country Club Drive, Pittsburgh, Pa., Phone Pl. 1-9411.

P. F. JASIK, Publisher and Editor

Manufacturers and Lubrication Engineers Since 1890

Lubrication Engineering follows an established, definite pattern of studying the Machine and recommending a lubricant to meet the situation.

Let our engineer discuss with you the NEW DEVELOPMENT IN HYDRAULIC lubrication.

STIFFLER INDUSTRIAL LUBRICANTS CO.

Etna, Penna. Phone St. 1-1571 and 1-2660

You Can Say It With PRIDE "IT'S AN AURORA PUMP"

Type AD Hor. Split Case, Two Stage Centrifugal
Type OD Hor. Split Case Double Suction Single Stage Centrifugal
NSA Aurora Centrifugal Sump Pump
Aurora Pumps are the products of Experience. The Aurora Personnel has but ONE objective—the building of fine pumps. We are not jacks of all trades. We are exclusive pump builders. The splendid record of thousands of Aurora Pumps on a myriad of war services is your assurance that your post-war needs will be superbly taken care of as you, too, install "Pumps by Aurora."
Type GMC Close-Coupled Centrifugal
Type GGU Side Suction Single Stage Centrifugal
APCO TURBINE-TYPE PUMPS—the simplest of all pumps. Ideal for small capacity, high head duties. Silent, compact and lasting.
The ONLY MOVING PART is the ROTOR
Write for CONDENSED CATALOG M
APCO Single Stage Turbine-Type
APCO Horiz. Condensation Return Unit

PUMPS — MACHINERY — SHOP EQUIPMENT

Tranter

MANUFACTURING COMPANY

105 Fort Pitt Blvd. Pittsburgh 22, Pa. Court 1-0600

Twenty-four Hour Service

SKF
Hyatt
Bantam
Torrington
Aetna
Auburn
Medart-Timken
Bunting Bronze
Browning V-Belt Drives

New Departure
Bower
Orange
Shafer
B & R B
American
Kilian
Victor Seals
Lincoln Lubrication

FOR BEARINGS CALL HARRIS

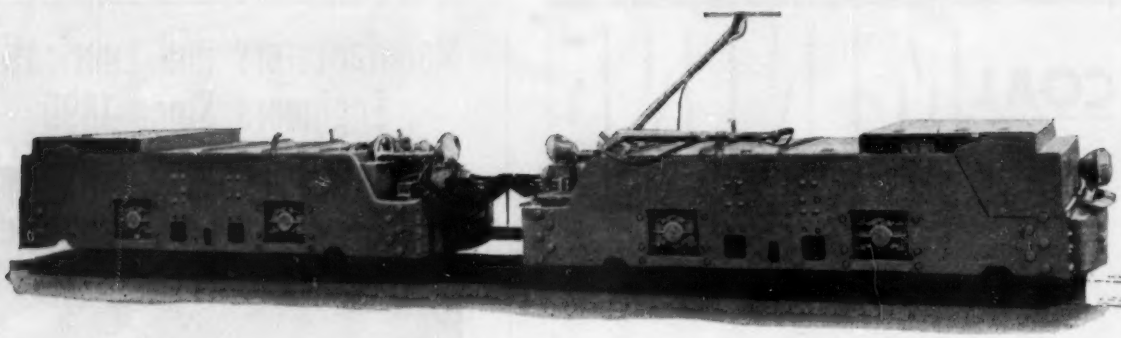
HUbbard 1-4400

Bearing Division

H A R R I S

PUMP AND SUPPLY COMPANY

Brady and Sidney Streets, Pittsburgh 3, Pennsylvania



For Heavier Duty Main Line Locomotives

Connect Your Single Units In *Tandem*

HERE'S HOW: Simply connect identical haulage locomotives in either permanent or separable Tandem units (see above). To do this you may require Controllers, Contactors, Power Brakes or other mechanisms to complete the job. Jeffrey can help you obtain adequate main line haulage for your mine. For an estimate of necessary details . . . call your nearest Jeffrey district office or direct an inquiry to Columbus. Do it today.

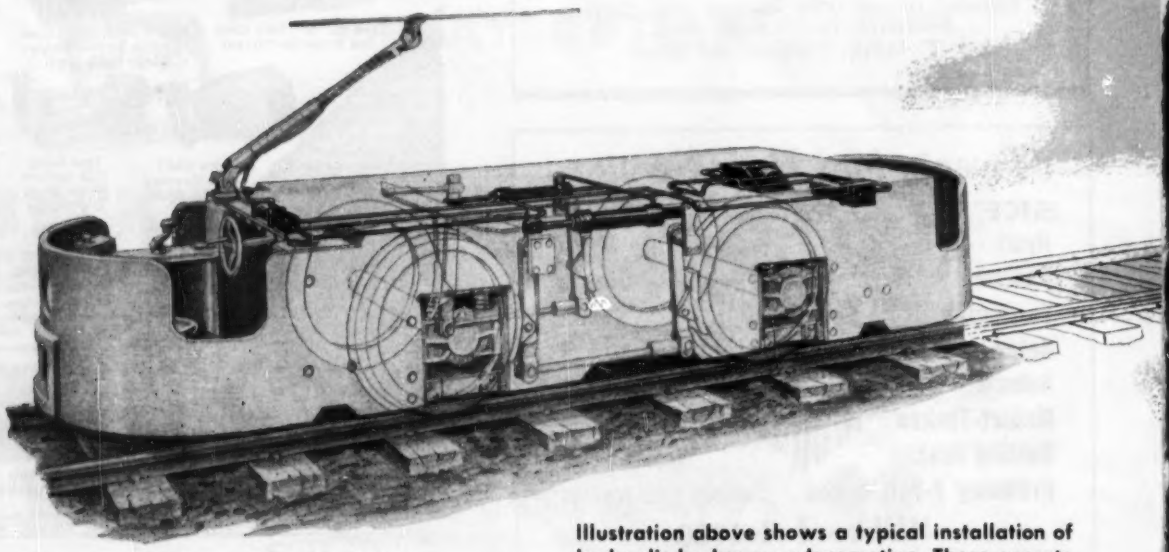
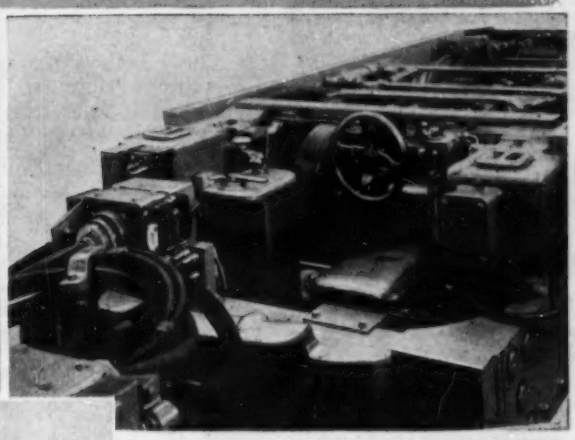
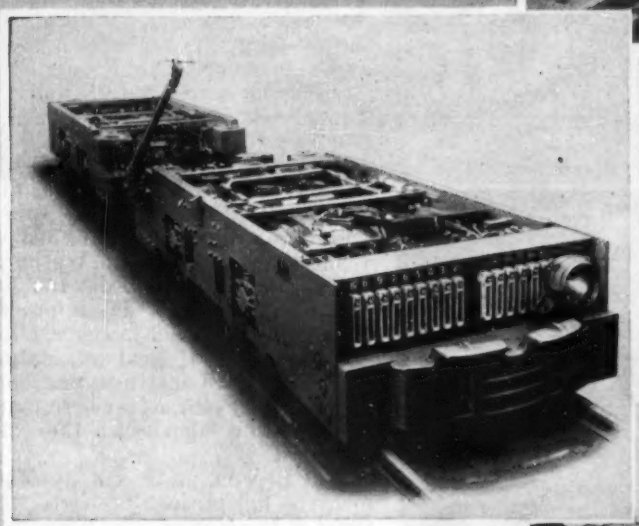


Illustration above shows a typical installation of hydraulic brakes on a locomotive. These operate on the same principle as the air brake but occupy about one-fourth the space. Installation is a simple matter.

Left — A 20-ton permanent Tandem unit utilizing two 10-ton locomotives. This makes a very desirable main haulage unit.

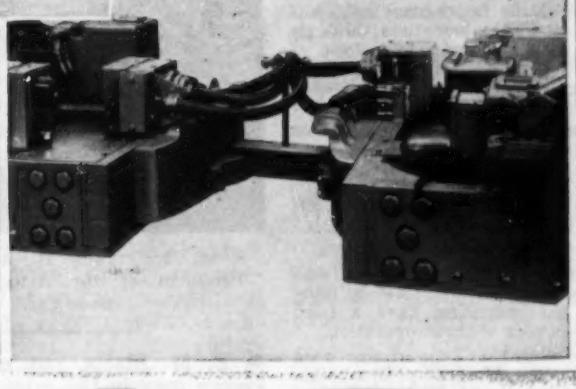


Right — A close-up view of the motorman deck in a tandem unit showing the control for the hydraulic brakes, the four-motor controller and installation of the electrical and hydraulic cross-connection. Air brakes are recommended, providing there is space available for installation of equipment.



Left — View of a permanent Tandem unit equipped with contactor control. Note bank of contactors in foreground.

Right — A close-up view of a typical permanent Tandem connection showing the drawbar, bumperettes, electrical and hydraulic brake cross-connections.



THE JEFFREY MANUFACTURING CO.

ESTABLISHED 1877

Columbus 16, Ohio

sales offices and distributors in principal cities

PLANTS IN CANADA, ENGLAND, SOUTH AFRICA.

IF IT'S MINED, PROCESSED OR MOVED

. . .IT'S A JOB FOR JEFFREY!

Do You Know?

● Two new electronic "brains," lightweight enough for air-borne control of guided missiles, were revealed here by the Jacobs Instrument Company, Bethesda, Md.

The small but high speed computers, one of which has been built, the other being in design stage, are low cost and comparatively easy to produce. They can be used not only for computation but also as robot controllers.

Nine devices feed information concerning the apparatus to be controlled into the computer, and after complicated mathematical computation, the computer controls three external pieces of equipment. The actual use to which this computer, known as JAINCOMP-C, will be put is a "military secret."

● Discovery that a combination of rheumatism and a new lung condition, making up what may be a new kind of disease, hits coal miners is announced by Medical Research Council scientists in the British Medical Journal.

The lung condition, which the scientists term "rheumatoid lung lesion," shows quite a different X-ray picture in some respects from that of progressive massive fibrosis in the pneumoconiosis which doctors are accustomed to seeing in coal miners.

It can develop several years before, at the same time as, or several years after the arthritis starts.

The arthritis affect more than half the patients with the peculiar lung condition, whereas arthritis is found in only three out of every 100 miners with the usual lung disease, progressive massive fibrosis. No cases of arthritis were found in miners without any lung disease or in those with only simple pneumoconiosis.

Best explanation for the new combination of diseases, the scientists think, is that there may be a particular type of tissue reaction to dust and tuberculosis in the lungs of miners who are predisposed to rheumatoid arthritis.

The scientists who made the study in the Rhondda Fach, a South Wales mining valley are: Drs. W. E. Miall, Anthony Caplan, A. L. Cochrane and G. S. Kilpatrick and Mr. P. D. Oldham of Cardiff, Wales and London.

Patients wounded in the heart who reach the hospital alive at least 30 minutes after the wounding have a good chance of recovery without operation.

Studies of dogs that suggest this were reported by Drs. H. LeRoy Brockman, Denton A. Cooley and Michael E. DeBakey of Baylor University College of Medicine at Houston, Tex., at the meeting here this morning of the American College of Surgeons.

Chances of dying immediately are a little greater if the wound is in the left vetricle of the heart, the chamber that pumps oxygen-rich blood from the veins to the body, than when the wound is in the right ventricle, the chamber that pumps blood to the lungs to pick up oxygen.

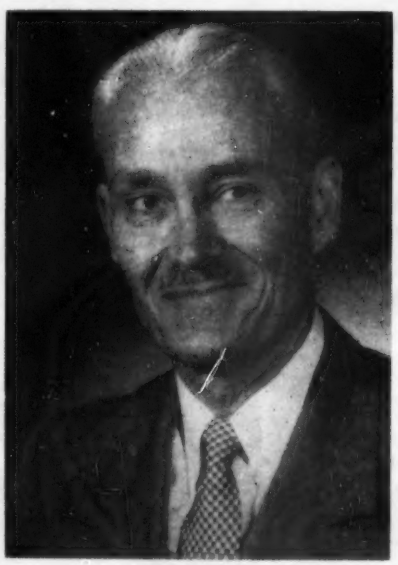
Bleeding, however, is likely to be greater from wounds of the right ventricle than from the left.

Here and There in the Coal Industry

● The Jeffrey Manufacturing Company, Columbus, Ohio, announces the following changes in its Public Relations Personnel:

Mr. L. H. McReynolds, who has been with the company for 33 years, takes over as Manager of Public Relations. He succeeds W. B. Montague who resigned recently to accept a position in Cleveland, Ohio. A. D. Mahoney, 39 years service, continues as Sales Promotion Manager. Nevin J. Rodes, a newcomer in the organization, will have charge of Trade Paper Advertising.

Founded in 1877, the Jeffrey Company builds a complete line of Mining and Material Handling Equipment.



Chas. A. Vignos, II, has become President of the American Mine Door Co.

● E. M. Platts, one of the best known men in the mining machinery business, and Executive Vice President of Joy Manufacturing Company for several years, has been obliged to resign his position because of failing eye sight.

Mr. Platts will continue to serve the company, having been employed by Joy as a consultant to its executives and Board of Directors. He will maintain his office in company headquarters in Pittsburgh.

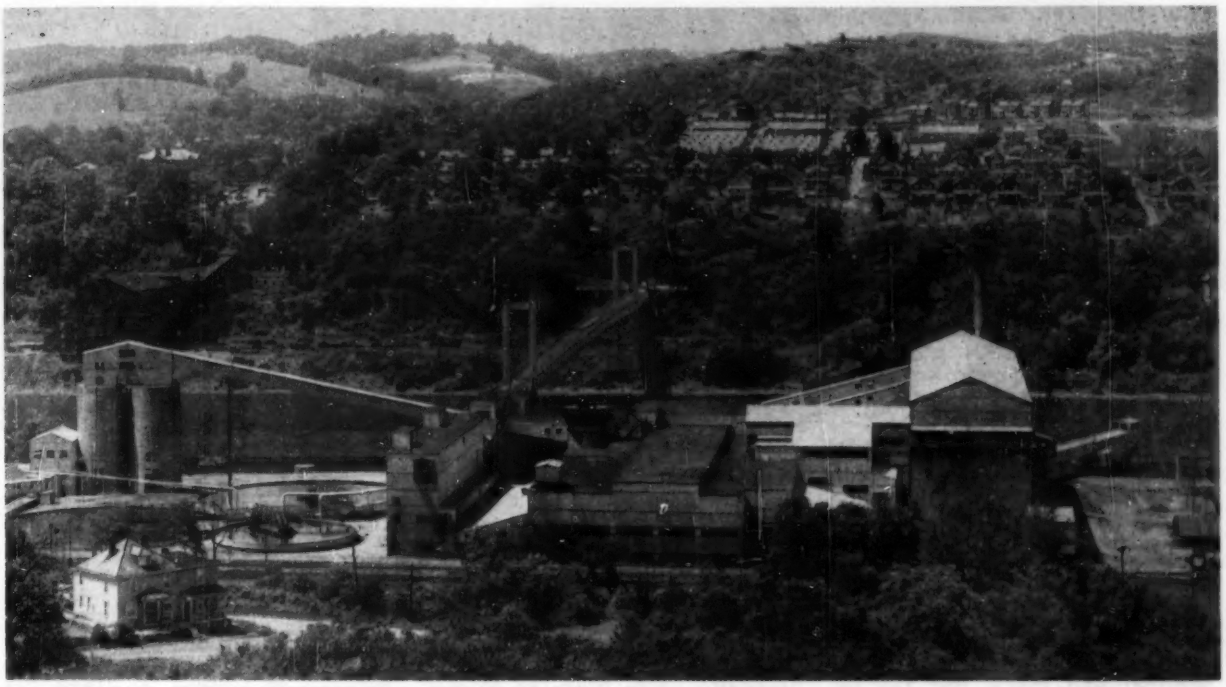
● Dr. Lewis E. Young, age 75, former Vice President, Pittsburgh Coal Co., and more recently a consulting mining engineer, died at his home in Pittsburgh. He was a former President of the American Institute of Mining and Metallurgical Engineers, and was well-known throughout the coal industry.

● J. B. Benson has been appointed Safety Director of the Southern Coal Producers Assn. The position, newly created by the Board of Directors, is intended to coordinate safety activities of the Association's members, the Federal and State mine safety bodies and the United Mine Workers of America. The new Director will work closely with the industry and particularly the secretaries of their various districts; the Federal Bureau of Mines, and State safety authorities and officials of the United Mine Workers; will also advise and assist the Association members in improved safety practices and in cooperation with the several local association secretaries will institute and conduct training courses for both management and labor when they are indicated.

Mr. Benson, until his appointment to his present position, was Chief of the Norton, Va., Branch of the Bureau of Mines, prior to which he had extended service with the Bureau and in the industry in many production, safety and management capacities.

● The sixteenth annual meeting of the American Power Conference will be held on March 24, 25 and 26, 1954 at the Sherman Hotel in Chicago. The Conference is sponsored by the Illinois Institute of Technology in cooperation with twelve universities and ten local and national engineering societies.

The purpose of the Conference is to provide a forum for the exchange of information in the fields of power generation, transmission, distribution and utilization. All persons interested are invited to attend. For further information, write to E. R. Whitehead, Secretary, American Power Conference, Illinois Institute of Technology, Technology Center, Chicago 16, Illinois.



General view of J & L's Vesta-Shannopin Coal Preparation Plant, located at Vestaburg (seen across river) approximately 63 river miles up the Monongahela River from Pittsburgh.

Coal is conveyed into plant across suspension bridge, center, from the mines which stretch from five to ten miles underground. Coal is then washed and treated, and loaded into barges for shipment down river to J & L's Pittsburgh and Aliquippa Works.

Coal's Position in the President's Materials Policy Commission

RESOURCES FOR FREEDOM

A special presentation of the RESOURCES FOR FREEDOM report of the President Material Policy Commission has been broadcast over the CBS Television Network, from 3 to 4 P. M. Sunday, January 10. This report was purported to be so vital to the economic welfare of this nation that it was the first Presidential Commission report ever to be broadcast over a nationwide network.

Playing the very vital part that it does in the economy of this nation, COAL received more mention in the report than any one other natural resource.

——— This Commission made 78 proposals to guard America's strategic materials position and to protect our nations security, several of those recommendations follow. They do not all pertain to the coal industry but are sufficient interest to be read by any citizen having to do with managing industry.

. . . Recommended: take a minerals-census every five years . . . Speed up geological mapping . . . Step up and improve exploration programs . . . Give better financial aid to small miners, and to prospectors seeking strategic ores.

. . . Recommended: Open up Federally-owned commercial timber lands by building access roads . . . Stop destructive timber-cutting on private land . . . Create a national system of forest credit and forest insurance . . . Step up fire protection.

. . . Recommended: Make new agreements with friendly resource countries that will encourage and protect U. S. investment . . . Expand technical aid to underdeveloped countries who want to sell us materials we need . . . get rid of tariffs that keep out of our own country materials we need.

. . . Recommended: Make a thorough study on how to advance our coal technology most rapidly . . . Develop our water power potential to the full, particularly on the St. Lawrence, Niagara and Columbia Rivers . . . Encourage Government-and-Industry cooperation to develop commercial electric power from atomic energy . . . Allow the National Science Foundation to sponsor some of the basic research we are falling behind on.

. . . Recommended: Use military material more efficiently . . . Review current policies for conserving scarce materials and to increase scrap recovery . . . Keep on stockpiling strategic and critical materials, at minimum cost for value received.

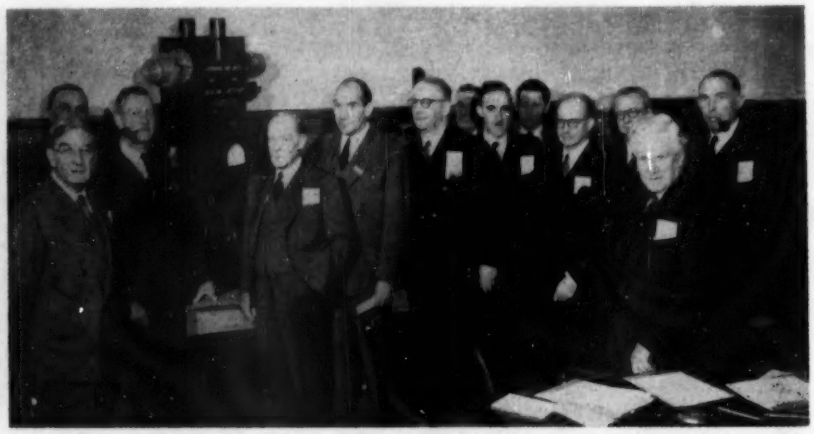
PAUL ALSPAUGH, Director, Coal Hydrogenation Plant of Carbide and Carbon Chemicals Company, at Institute, W. Va.:

Here we make chemicals from coal. The process is specifically adapted to do that, but with reasonable changes one could make synthetic liquid fuels from coal. In this general area the synthetic rubber program was started during the war. Here we have again the start of a new process, that of making chemicals from coal . . . We start with ordinary coal — it goes into a part of the process where it is pulverized. To it, oil from the process is added to make a paste. The paste is delivered

into the high-pressure reaction unit. The second and other raw material, hydrogen, is compressed and delivered also into the high-pressure reaction unit. Here at high pressure in the order of 6,000 pounds — high temperature, 600 to 1,000 degrees Fahrenheit — the reactions occur which convert the coal into oil and gases. The products flow into several units where separations are made, where the gases are separated into fuel — methane, a constituent of natural gas — propane and butane, the bottled gases. The oils are separated into chemical units, into the chemical products. Some of these products we make now — napthaline, you know it as moth balls — it's a chemical intermediate or raw material — the cresoles and zylenols, disinfectants—phenol — phenol for plastics — Bakelite plastic is the common one. These are just a few of the chemicals that we are now making. We know we can make upwards of a hundred and that's just the beginning.

VANNEVAR BUSH, Head of the Office of Scientific Research and Development during World War II:

Even when the scientific and technological problems of coal are completely solved, there will still be plenty for the scientists and technologists to do in this enormously important field of materials. It is not good for us to use at the moment merely the materials that are less expensive without thought for the next generation. We must be wiser than that. One aspect of wisdom is to have plenty of good scientific research on our problems. Of course there is plenty of research going on in certain fields. For example, where industry sees a great opportunity, it is likely to be progressively at work. We have such a situation today — as in titanium. There is plenty titanium ore. The metal itself is very strong, highly non-corrosive. The Military need it for their purposes. It would be a very valuable metal and a whole new section of industry could be created if only the scientists and engineers would learn how to reduce titanium from its ores, and this they have not yet done. There is also a great deal of fundamental research under way in the universities and in the scientific institutions and most of it is long-range research that will come to fruition many years from now in ways that we cannot now envisage. Some of this fundamental work is already coming to fruition. For example, we have transistors today which have come out of our knowledge of semi-conducting materials, and these small gadgets are ultimately going to revolutionize large sections of our industry. But between fundamental research and immediate applied research, there is a gap. The universities, quite rightly, in working on fundamental research, do so in order to add to knowledge without immediate concern as to its application; and industry, again quite properly, works on the problems that are now before it — and for this pur-



A group of European Coal Mining Men on inspection trip of mines in this country

Night shift Foremen and Key Men of Slab Fork Coal Co., attending the U. S. Bureau of Mines Accident Prevention Course for Supervisors, are shown attending one of the 20 classes. Left to right they are: Seated, Aubrey Keene, foreman; James Hutchens, foreman; Kenna McKinney, comitteeman; and W. D. McPherson, night foreman, No. 1 mine. Standing, Ralph Cole, foreman; H. G. Shrewsberry, Jr., foreman; Lundy Mills, foreman; Aubrey Bennett, foreman; Luther Conn, tipple and Orville Burgess, tipple foreman.

Also taking the course are the men above as they observe a movie "Motormen and Brakemen" used on the subject of haulage. Left to right they are: First row, George McKinney, night foreman, No. 8 Mine; Orville Lawson, brakeman; Amos Hicks, motorman; Elmer Darnell, foreman. Second row, Kenneth Bays, foreman; Willis O'Neal, electrician; Mose Eller, motorman; W. A. Deweese, motorman and Hobart Kidd, tipple; Lloyd G. Fitzgerald, explosives engineer, U. S. Bureau of Mines, Mount Hope, W. Va., is shown at the movie projector.

pose, scientists and engineers are scarce. They will always be scarce because there is so much for science and engineering to do, but this problem of producing new materials, adapting old ones, finding better ways of doing things with materials, is so important that it warrants the best attention of the finest scientists and best teams of engineers that this country can muster.

JAMES HYSLOP, Hanna Coal and Ore Company:

We are attempting to face the fact that the industry has not made sufficient progress in recent years to meet the challenge of today and tomorrow. The fact that we have lost 150 million tons of market to the oil and gas industry is a sufficient incentive to increase our efforts along this line. Speaking for management I am sure you can count on the coal industry to prepare adequately to meet the demands of 1975.

ERIC HODGINS, Member of the Board of Editors of Fortune Magazine; Member of the Commission:

For the world's most highly industrialized nation, the United States has a remarkably small working force of researchers — some 76,000 scientists and 59,000 engineers. If all our industries were as progressive as the chemical industry or the oil industry, we'd have considerably more men working on research problems. But they aren't. Our great industrial procession in the U. S. has some stragglers. Our Commission's study of what is ahead from now to 1975 made us feel that the industries depending on physics and chemical engineering are pretty far out in front of those that depend on metallurgy and the so-called earth sciences. But it is upon these latter that we must rely for increasing our supplies of natural resources and for making those supplies go further and serve better in use. It isn't just a question of money; our friends in England and Europe teach us that again and again: In the United States we pour out on research nearly three billion dollars a year — and sixty cents out of each dollar is spent by Government — mostly by the Department of Defense. So it is a fair guess that a major part of this research is devoted to activities that consume materials—by burning them out or blowing them up — without sufficient balancing attention to

This European method of holding roof in deep mining is used with the scaper method of mining at the Barnes & Tucker Coal Co., Barnesboro, Pa.

programs that would keep up the supply and lower the cost. Right now we have nowhere a consciously designed broad gauge program to meet the materials problem on all fronts. The Commission thinks it's high time we created such a program, and put it to work.

HOWARD COONLEY, Vice President, Research Corporation, New York:

This problem of waste is complex. No one ever spends a dime to recover a penny, nor should he. So some waste is inevitable. And it doesn't make any sense to hoard materials because you think they may be scarcer tomorrow. You may just turn out to be foolish. If our ancestors, who lived by lamplight, had hoarded their whale oil to give to us, their great-great-grandchildren, we'd hardly give them civil thanks for their gift. We need it no longer, for we live by kilowatts of electricity that come from coal or petroleum, or from falling water. But still, even though we should not be misers, we must be prudent. In the past, we've left too much coal in our mines — about 50 percent of it — and in some mines you can never go back to get it out. Some of that is bad waste. We are steadily getting better, though, on the amount of oil we leave behind when we finish with an oil field, but we must do better still. We don't have a good record on natural gas: we've burned off too much of it in the fields where it's produced — "flaring," that's called — because once we didn't know how to do anything better. Even a few years ago we wasted enough natural gas to do all the heating and cooking for eleven million homes. Why? You may find it hard to believe, but it was because the gas was so cheap. It was so cheap that it didn't pay anyone to lay the pipes and do the pumping to bring it to the markets where it could be burned usefully. Now that gas costs more, we waste it less. The older we grow, the more we must learn to use, and the less we should have to discard.

JOHN L. LEWIS:

By 1975 coal will again be powering railroads and probably millions of automobiles, not as a solid but as a liquid synthetic fuel. Coal's conversion into liquid fuel is a reality. In the next generation, our coal, because of efficient production methods — we are now producing seven tons per man per work shift as against the one ton produced by our nearest competitor nation — our coal will play an increasingly important role in bolstering the economy of our allies in Europe and Asia.

A SMALL MINE-OWNER, Earl K. Hess, Keyser, W. Va.:

You know, it's all well and good for John L. Lewis and the big operators to sound off on spending money for the development of new techniques and technology. I'm lucky if I can make expenses by using the equipment that has been developed in the past years. All the savings and labor has been passed on to the miners in the form of higher wages and welfare benefits. There has been nothing passed on in the way of saving to the uses of coal. All my customers

have gone to oil and gas. It makes sense. You can't burn coal in an oil furnace or a gas burner. There is just no demand for coal today. Now I understand that in the next 20 years, there will be a great demand for coal, 70 per cent more than now. Well, that will be fine. I just hope that I can stay in business until then and have money to buy the equipment that will be necessary to mine and prepare coal for its new uses.

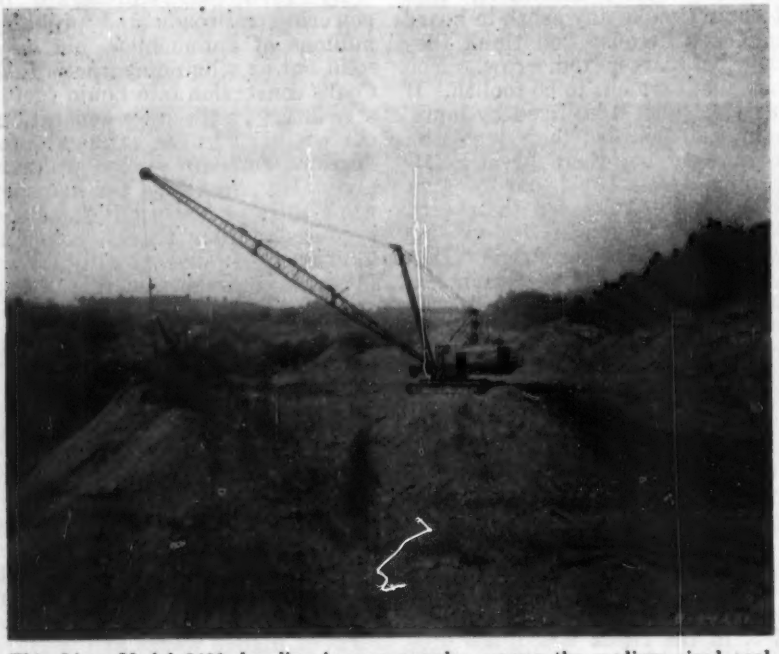
SENATOR HENRY C. DWORSHAK (R), Idaho:

Last September at Denver, the American Mining Congress sponsored a panel discussion of the so-called Paley Commission Report. I was invited to take part in that discussion. I had not studied the voluminous report, but I was aware that a new policy was being proposed whereby it was being contended that the U. S. was rapidly becoming a "have-not" nation, which meant that in the future we would have to rely to a large extent on production of strategic and essential minerals abroad. Because of that fact, I opposed the principles and some sections of the Paley Report because I know that throughout our Western States are vast undeveloped mineral resources. To be explicit, I want to point out what happened at Stibnite, Idaho, where we have an antimony refinery and operations which produced, a few years ago, about 90% of our entire production of antimony. However, because of the purchase abroad of antimony, that operation shut down and today we are virtually dependent entirely upon foreign production. So far as I am concerned, I am unwilling to accept all of the recommendations of that Commission.

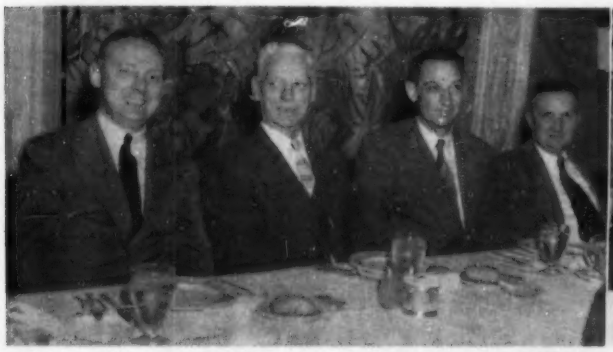
Motor Graders like this Caterpillar No. 12 are used to scrape impurities off the surface of uncovered coal in strip mining.

Like Mr. Henry C. Dworshak, this publication is unwilling to accept all the recommendations of this Committee because it is inconsiderate of the American working man and American business.

The recommendations of this committee have not yet been fully put into effect and we already have an estimated 160,000 coal miners out of work because we are importing residual foreign oil to our Eastern Seaboard to be used as a fuel. There is no shortage of fuel in this country. In fact there is more of the best kind of fuel in this country than in any other part of this world. Despite this a "dump" product most of which has been discarded until it was imported under the disguise of reciprocal trade, displacing the American worker. The country from which this residual oil is being imported recently increased its trade barrier to keep American products out of its domestic market. Even if that country bought all its imports of our type of products from the United States, it is doubtful if that would reemploy the American coal miners displaced, to say nothing of the railroad workers that have been displaced as well as the smaller businesses in the mining and other communities.



This Lima Model 2400 dragline is very popular among the medium sized coal strippers. This is one of the largest draglines on Caterpillar treads. It is powered by a Caterpillar Diesel D-397 engine, working in the Pittsburgh seam of coal near Flushing, Ohio.



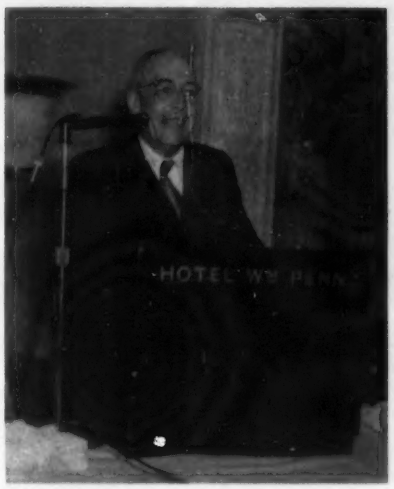
Left:: John Ryan, Mine Safety Appliances Co.; Joseph Bierer, Chief Dept. Mines, W. Va.; James Westfield, Chief Health & Safety Div., U. S. Bureau Mines; Harry Dusz, Chief Dept. Mines, Ohio.

Left: W. Garfield Thomas, Deputy Secretary, Penna. Dept. Mines; J. J. Snure, incoming President and T. E. Purcell, Gen Supt, Power Stations, Duquesne Light Co. and principle speaker.

Sixty-seventh Annual Meeting Coal Mining Institute of America

The Coal Mining Institute of America met at the Wm. Penn Hotel, Pittsburgh, Pennsylvania on December 10 and 11 for the 66th time. While this gathering was not quite as large as last years meeting, it seemed to be the finest group of coal mining men I have ever seen assembled to date. That could be because of the great increase in intelligence of the average American citizen in the last several decades because of the great increase in mechanization, or because of the plight in which the coal industry finds itself at this time.

Due to the very urgent need of social and technological advancement in the coal mining industry, every opportunity of a gathering of coal mining men, no matter how small, should be utilized to discuss problems that will lead to the betterment of our industry.



Heath S. Clark, Chairman of Finances Rochester & Pittsburgh Coal Co. was the Toastmaster.

We have been discussing the necessity for more technological engineers, pro and con, now for a number of years. There has never been brought up at any meeting the need for another very vital kind of engineer, the human engineer. To induce the right type of man to operate the coal mine of the future, something is going to have to be done to improve the general social standing in our industry.

For about ten years now, COAL MINING has advocated scientific and social education for teen age boys in our industry. Had that kind of education been provided, we would have today young men in their early twenties, educated in

(Continued on page 19)

Left: James Ashton and D. D. Duratz, Storekeepers; Harry Riffle, Foreman; Frank Hoatman, Storekeeper; Bert Tasdale, Jr., Salesman; Chas. F. Sargent, Jr., Foreman; Frank G. Gasham, Clerk; Edward H. Kantorik, Clerk; W. E. McClain, Master Mech.; John Harris, Mine Electrician. All but the salesman are from the Karen and Bridgeport mines of the U. S. Steel Corp.

Second from left: Arthur Lamb, Supt., Pricedale Mine, Pittsburgh Coal Co.; Oral Robson, Third from right, Reese Nichols, Jack Whitaker, Pittsgurgh Coal Co.; Mike Rocco, Master Mech. Mathies Coal Co.

Left: H. P. Greewald, retiring President, Heath S. Clark, T. G. Ferguson.

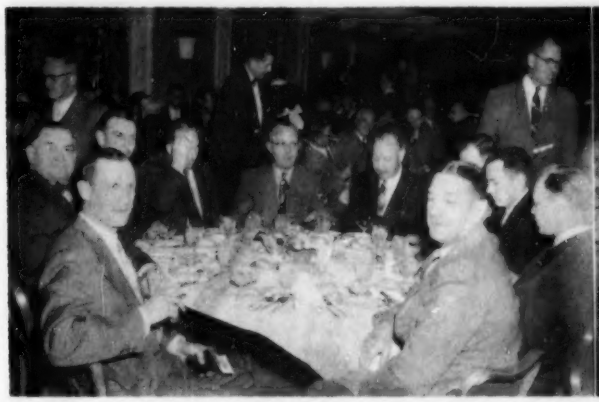
Left: J. W. McKenna, Acting Deputy, Penna. Dept. Mines, A. D. Sisk, Chief., Dept Mines, Kentucky; Wm. P. Powers, Penna. States Mine Inspector; J. W. Lowe, Secretary-Treasurer.

Left: G. F. Lipscomb, Rome Cable Co.; Don Dowlin and A. E. Copeland, Buckeye Coal Co.; J. F. Sinclair, Hewitt Rubber Co.; H. L. Swihart, Alex Grant, Martin Valeri, M. M. Fitz-Water, all of the Buckeye Coal Co.; J. R. Woods, Rome Cable Co.

Left: John Hancher, Mine Foreman, Reitz Coal Co.; Nick Sepetz, Chief Electrician, Berwind White Coal Co.; Harry Richards, Pur. Agent; Christopher Coal Co.; Merlyn E. Condit, Sales Eng. Mine Safety Appliances Co.; R. B. Hewes, Pennsylvania State University; W. J. Maher, and C. L. Barnhart, Sales Engineers for the Mine Safety Appliances Co.

Left: B. R. Walburn, Gen. Master Mech.; W. G. Kegel, Asst. Gen. Master Mech.; E. A. Stenson, Asst. Mine Foreman; W. R. Weaver, Asst. Mining Mechanical Eng.; C. W. Rager, Asst. Mine Foreman; David Page, Gen. Supt.; Don Howe, Mining Industrial Eng., all of the Jones & Laughlin Steel Corp.

Left: Russelle Loach and Neil Baker, Austin Powder Co.; C. B. Tillson, Supt. and Bill Hart, Safety Dir., Crucible Mine, Crucible Steel Co. of Amerca; E. D. Downer, Mine Foreman, Warwick Mine No. 2; Jack Stephenson, Supt. Warwick Mine; M. B. Rafter, Mine Foreman No. 1 Mine; W. E. Kramer, Chief Clerk, Warwick Mines.



Left: Art Goodwin, Chief Elec.; Chas Chandler, Gen. Forman; Wm. Zies, Master Mech., all of the U. S. Steel Corp,; J. E. Pringle, Electrical Inspector, Commonwealth of Penna.; Wm. Schiffbaur, Master Mech., Youngstown Sheet & Tube Co.; Howard Miller, Master Mech., Crucible Fuel Co.; James Sicklesmith, Asst. Technical Foreman, U. S. Steel Corp,; Dale Miller, Crucible Fuel Co.; L. V. Anderson, Technical Foreman, and H. Clyde Sechler, Master Mech., U. S. Steel Corp.

Left: E. S. Wade, retired; W. W. Wagner, Secretary; J. H. Remeks, storekeeper; G. N. Truby, Master Mech.; Wm. C. Stresky, Storekeeper; Linne Bochman, Officer; R. C. Walter, Clerk; Arthur Hall, Supt.; T. L. Simpson, Machinery Agent; J. M. Hackett, Engineer. All but T. L. Simpson are with the Allegheny Coal Co., subsidiary of West Penn Power Co.

What Is The Scholarship Situation Today?

A report, given by M. D. Cooper, Director, Mining Engineering Education, National Coal Association, at the Sixty-seventh Annual Meeting of the Coal Mining Institute of America, Pittsburgh, Pennsylvania, December 11, 1953.

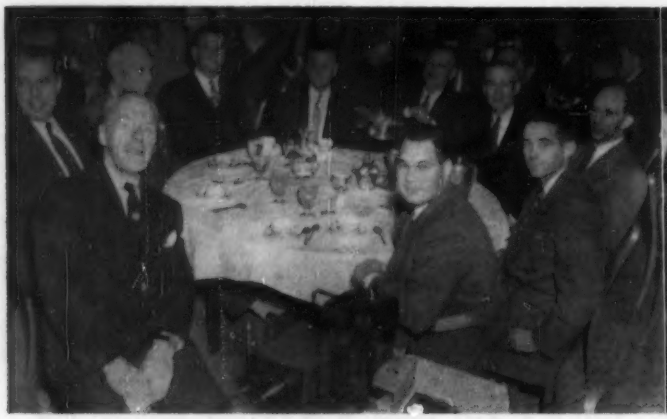
Scholarships are investments. Usually investments are capital placed at work. The prudent man chooses an investment that he believes will return an income. Perhaps the income will be in the form of satisfaction alone. That must be the case when small contributions are made to a fund established to provide scholarships for those that are considered worthy of them.

The holder of the scholarship is, of course, the principal person in the plan. He must be a good investment. In the first place, he

Left: W. N. Truxell, Chief Shipper; Wayne D. Snell, Asst. Dir., Mine Inspection; L. E. Foster, Salesman; M. B. Girod, Supt. Robena Mine; John Reckus, Capt. Plant Inspection; M. C. Rosnack, Mine Foreman; I. J. Menercheck, Mine Foreman; James C. Whaley, Storekeeper. All but L. E. Foster are with the U. S. Steel Corp.

Left: Emmett Harris and Bill Cominsky, Mfg. Reps.; W. S. Snyder, Jr., Constr. Foreman; Guy Sutton, Storekeeper; Tom Traynor, Yard Foreman,; Adam L. Snyder, Jr., Timekeeper, all of the U. S. Steel Corp.

Left: George Witherspoon, Mine Foreman, Baton Coal Co.; Geo. McCaa, Penna. Dept. of Mines; W. A. Morris, Safety Dir.; Jack Horner, Accountant; R. N. Tutt, Engineer; Vic Garzoni, Master Mech., all of the Baton Coal Co.; A. E. Swanson and Wm. D. McCullough.



Left: J. A. Erskine, Electrical Inspector and R. I. Hargett, Office Mgr., Eastern Gas & Fuel Associates; P. J. Callaghan, retired Mine Inspector; Walter Carter, P. H. Carter and Paul H. Weise of the P. H. Weise Coal Co.; John Schultz and John Rhea of the Electric Mfg. & Repair Co.

R. M. Ewens, Chief Clerk and N. K. Gumbert, Republic Steel Corp.; Paul C. Fletcher, Supervisor of Safety, Herman Coal Co.; L. C. Bush, Inspector, Charles O'Brien, Supt., both of Republic Steel Corp.; Stephen Krickovic, Chief Eng., Eastern Gas & Fuel Asso.; Lewis E. Young, Con. Mining Eng.; Wm. R. Chedsey, Prof. of Mining Eng., University of Illinois.

must be able to meet the terms of the scholarship. Need alone is not sufficient, although it is important. The student must have the intelligence, the enthusiasm and the perseverance to profit by the trust that is placed in him. To this end, he should be able to comply with the entrance requirements of the school or college to which he would like to go; and he should be able to carry the work there with better than average grades. There seems to be a notion in some places that scholarships are hand-outs. That is not the case. Those who provide the scholarships expect to get at least a minimum return in the form of satisfaction in following the careers of the young persons who successfully prepare themselves for useful work.

A scholarship is given to provide someone with an education. That is highly desirable, of course. But an education is not a guarantee of success. It provides a good start. The rest depends on the student himself. On the other hand, there are plenty of well known cases of self-educated persons whose native ability carried them along to leadership in all fields of work. Therefore, a scholarship may be considered a great help but almost everything depends on the student himself.

An industrial scholarship of any kind requires not only financial assistance during the college year, but an opportunity to earn additional funds during vacation periods and to learn by practical experience at the same time. Plans vary in regard to employment after the student graduates. Some companies expect him to return to the works or mines of the donor. Others give him freedom of choice.

NUMBER OF SCHOLARSHIPS

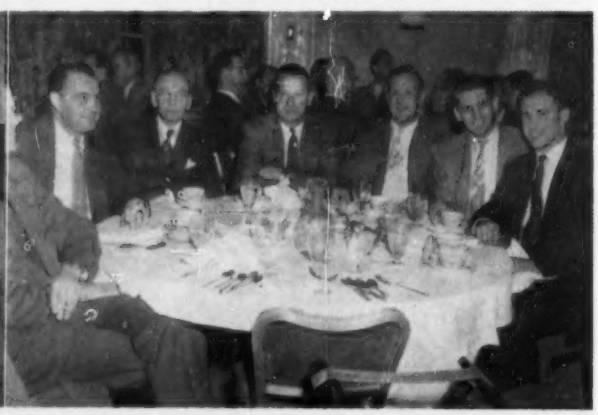
Lovejoy's College Guide includes this statement: "It would be completely impossible to enumerate all of the scholarship grants, loan funds, and jobs for college men and women. It would be hard to find an American College or University without some scholarship. But the number changes every year. The General Electric Company now has 285 awards totaling $370,000 annually for employees and their children."

Westinghouse Electric Corporation maintains 156 scholars and 137 fellowships; it also sponsors 5 engineering professorships at universities throughout the country.

Newspapers publish almost daily items in regard to scholarships given by corporations, unions, associations, and individuals. Commrece Magazine, published by the

(Continued on page 20)

Left: Joe Vizza, Master Mech, Biggies Coal Co.; Paul Hill, Ray Barry, Jim Jones, Allan Crane, George Pete, all of the Mather Collieries Co.; S. A. Fredrick, Owner, Biggies Coal Co.



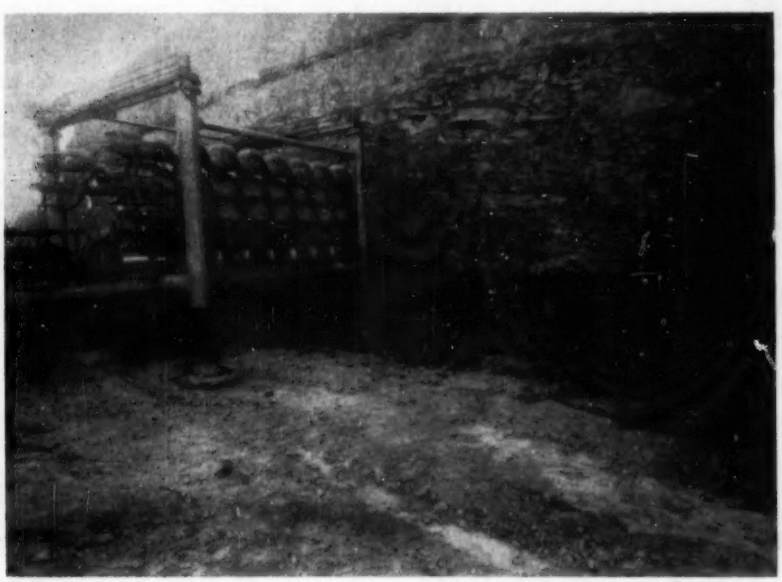
Left: C. B. Sims, Dist. Mgr.; R. E. Gerdetz, Eastern Sales Mgr. Cardox Corp.; L. F. Gerdetz, Consulting Engineer; Erwin Bennett, Bit Sales and Paul Brewer, Compressor Sales, Joy Mfg. Co.; John Morlan, Division Engineer and Wm. Zeller, Production Engineer, Warner Collieries.

The truck loading side of the Compton Auger.

HIGHWALL AUGER MINING IN NORTHWESTERN PENNSYLVANIA

It is said that necessity is the mother of invention. Sometimes needed things are invented by one not a user but who sees the need for his invention. Other times the user invents and has his item manufactured. In the majority of cases the new thing is an improvement over the old or adds something new in one way or another.

When a new idea has merit, it is picked up first by the most alert minds in the field of its application, followed by those who must pick it up to protect themselves or their interests.



The back side showing the coal seam after it has been augered and the method of storing auger on the unit.

The highwall auger is a new item that has revolutionized stripping in the coal industry. This item often gets more coal, at a lower cost, from an area formerly abandoned after the maximum, economic stripping height has been reached than from the area that has been stripped.

One of the first to use an auger in its territory is the Allison Engineering Company with operations in the coal outcropping area of northwestern Pennsylvania, in the vicinity of Foxburg. The Compton Model 36 Auger was being used with 32 inch cutting head. Upper and lower holes were being augered in the seam, 140 feet deep. The unit was new the operating crew was being broken-in and production was averaging 100 tons per hour.

● A fleet of seven experimental light weight coal haulers, built of a recently developed aluminum-magnesium alloy with excellent welding qualities, is being delivered to Aluminum Company of America by the Euclid Road Machinery Company.

To be used at Alcoa's Rockdale, Texas plant, the new light weight trailers have a capacity of 45 tons. This is 5 tons greater than the standard Euclid 40-ton Coal Hauler of equivalent power. The trailer body weighs approximately one-third less than standard steel units. Gross weight of tractor and trailer is approximately 8,200 lbs. less than Euclid's 40-ton steel model.

The trailers utilize Alcoa's A45S alloy, especially developed for welded structures. When used with the newest welding processes, this alloy provides greater strength and ductility for applications such as welded bulk haulage units, ship superstructures, barges, pressure vessels and heat exchanger shells.

The units are powered by Cummins 300 h.p. diesel engines and have a struck capacity of 61 cubic yards. Equipment includes a 10 speed transmission, air assist clutch and hydraulic booster steering.

● The Euclid Division, General Motors Corporation, announces the appointment of W. P. Sutherland as District Manager of a newly created territory in the Middle West.

Sutherland, with headquarters in Chicago, will be in charge of all Euclid operations in Illinois, Wisconsin, three northeastern Indiana counties, and the eastern half of Missouri. He formerly was connected with the Hibbing, Minnesota branch.

Euclid sales activities in Minnesota and the Upper Peninsula of Michigan outside the Iron Range will be handled by W. R. Brown, Euclid District Representative who succeeds Sutherland in that region.

Sutherland lives at 810 Robinhood Lane, La Grange Park, Illinois and Brown at 4759-14th Avenue, So. Minneapolis, Minnesota.

Both men may be contacted at their residences.

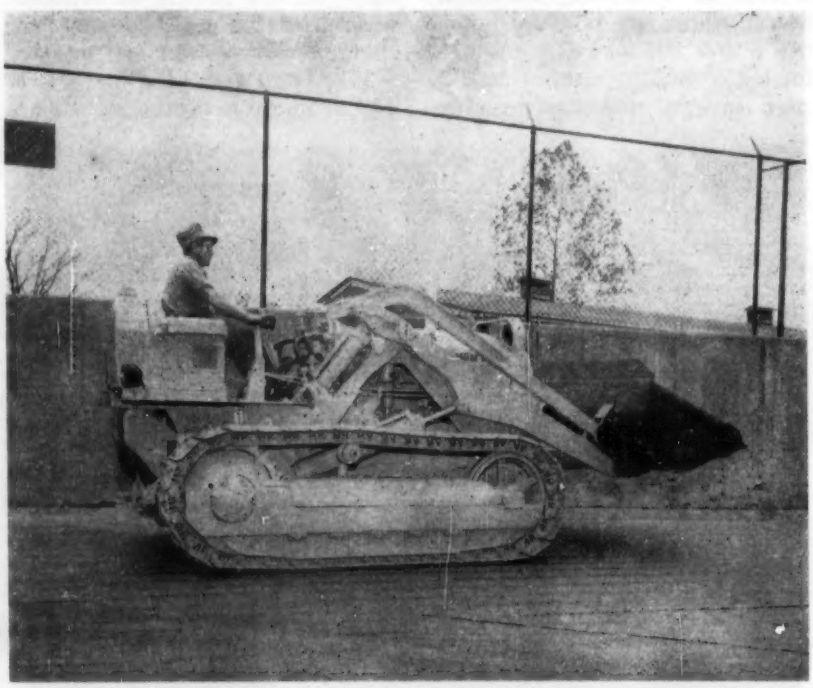
● George S. Baton, age 84 years, former Chairman of the Board of Greensburg-Connellsville Coal and Coke Co., and the dean of the nation's mining engineers, died at his home in Pittsburgh last week.

● A new improved standard bucket for the Caterpillar HT4 Shovel has been developed by Caterpillar Tractor Co., Peoria, Illinois.

The new two-position bucket will provide greater flexibility because of an adjustable pitch and a deeper bowl. This will make the unit ideal for either excavating or stockpile applications.

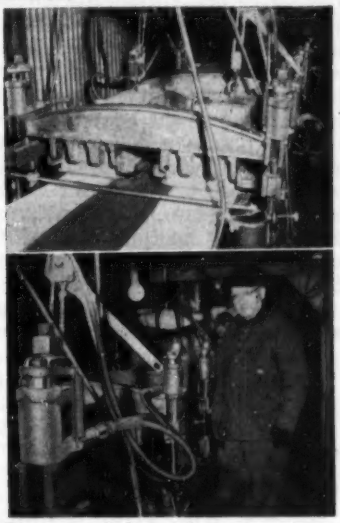
The two positions now available are achieved by changing the removable points. The forward hinge point for stockpiling gives quicker tilt-back and less spillage because of a 10 degree rack-back at the ground line. A simple adjustment connecting the bucket to the rear hinge point retains the former digging and dumping angles desirable for excavating work.

Redesigned bucket teeth are also available for the improved bucket, now standard equipment on the Caterpillar HT4 Shovel.



Caterpillar HT4 Shovel with the top-position bucket. Use of the forward hinge point—designed for loading loose, free-flowing material—results in less spillage by providing quicker bucket tiltback to an increased carrying angle.

In one of the largest iron mines in the world where conveyor belts are miles long (one is 3 miles long) and cost millions of dollars, the repairing of these belts is a constantly recurring job. In fact, one mine has built a special building expressly for use in renewing conveyor belt surfaces.



Resourceful engineers responsible for these operations hit upon a new and ingenious method for holding pressure on the vulcanizing platen. They utilize a 30 ton Center-Hole Hydraulic Ram made by the Owatonna Tool Co., Owatonna, Minnesota at each corner of the platen to maintain even pressure until the vulcanizing operation is completed. Two vulcanizing platens with four rams to each platen are in operation throughout the winter season when actual mining operations are suspended. The OTC Rams are hooked up in series to one pump in order that equal pressure may be obtained simultaneously at each Ram.

Until these Rams are installed vulcanizing costs were approximately $3.90 per foot. Installation of this new system reduced these costs to $1.80 per foot or one-half the former cost.

For complete information on Hydraulic Rams, ask your OTC Distributor or write to Owatonna Tool Company, Owatonna, Minnesota.

● An amazing new bacteria discovery, designed specifically to prevent cesspool clogging all year around in a single application, was announced today by Larry Davis, general manager of The Fermex Company, 4 Hill Street, Newark 2, N. J.

The new product, which is being marketed under the trade name of Formula FX-7, is the result of carefully selecting, adapting, and culturing several bacteria strains that continuously produce proteolytic enzymes by feeding on the organic matter within the cesspool.

Because of its active nature, the bacteria culture reproduces itself, thus assuring all year 'round prevention of cesspool clogging.

These protein digesting enzymes are combined with fat and carbohydrate splitting enzymes and maintain the cesspool in a constant liquid state, thus preventing the accumulation of waste from clogging the sidewall outlets. Because Formula FX-7 is a highly concentrated bacteria culture, liquefaction is so complete that it prevents undigested soil-clogging particles from reaching the surrounding absorption field.

The bacteria in Formula FX-7 are not affected by bacteria destroying soaps or detergents because of their extremely hardy nature. Formula FX-7 is safe and easy to use, and is not harmful to the plumbing, the cesspool, or the bacteria therein. It is used simply by pouring the contents of a quart can into the toilet bowl and flushing. Formula FX-7 is available from The Fermex Company, 4A Hill Street, Newark 2, N. J. at $4.98 per quart can, postpaid.

● The addition of a new line of low-cost, plastic-surfaced sponge rubber aisle runner to the complete line of rubber and plastic flooring manufactured by Fremont Rubber Company was announced here today by Wallace Gilbertson, vice president in charge of Sales. Frestep, as the new runner is called, is manufactured in 36-inch widths and 25-yard long rolls.

The new resilient material will find innumerable uses in professional offices, industrial plants, institutions and mercantile establishments. Its ease of cleaning and added comfort are especially desirable features where traffic flow is heaviest in all types of buildings.

The new vinyl plastic covering of the Frestep aisle runner line is an improved, long-wearing type to give years of service wherever safe traffic lanes and noiseless walking are required. Four marbelized colors are available: dark green, brown, red and gray. Additional information on the new product is available from the manufacturer at Fremont, Ohio.

H. J. Hunkele

● Mr. H. J. Hunkele, former assistant sales manager of the central division of the Caterpillar Tractor Company, Peoria, Illinois, has been made assistant manager of industrial sales in the engine division.

E. A. Tiarks

● E. A. Tiarks has taken the place of Mr. Hunkele. Mr. Tiarks has been assistant sales manager of the Western Division for the past three years.

C. B. Leber

● Mr. C. B. Leber, who has been a sales representative in the plains division has been made assistant sales manager in that division.

Sixty-Seventh Annual Meeting

(Continued from page 13)

mathematics, technology and electronics to help us get started in automatic mining, which seems to be the only way out of our present difficulties. As things stand now, we are going to have to compete with other industries to get highly skilled technicians and then take men who are green to the coal industry.

Following is reproduced a paper presented at this meeting by M. D. Cooper, Director, Mining Engineering Education, National Coal Association which should help in this particular problem.

WHAT IS THE SCHOLARSHIP

(Continued from page 16)

Chicago Association of Commerce, in the September, 1953 Number, states that there are now some 75,000 schloarships valued at $15 Million Dollars, annually available to young Americans.

SCHOLARSHIPS IN THE COAL INDUSTRY

Since it is impossible to describe all of the scholarships in detail, it may be best to choose a few to illustrate the range of conditions surrounding them, taking examples from each of five important coal producing states.

ILLINOIS

Sahara Coal Company, Inc., provides 8 scholarships at the University of Illinois. On account of the small charges made by the state supported University, the scholarships are limited to $200 per year. The awards are made by the faculty of the Department of Mining Engineering, usually to students already in the Department and who are judged to be outstanding as well as in need of financial assistance.

INDIANA

The Enos Coal Mining Company in 1951 inaugurated the George A. Enos Memorial Scholarships at Purdue and Butler Universities. It is planned to have eight boys, four at each University each year. As two graduate, two others will be appointed to start their courses. The scholarships are intended for seniors in the upper third of the classes in the high schools of Pike, Knox, Gibson, Warwick, or Daviess Counties in the State of Indiana. They are not limited to families of employees. Each scholar at Purdue will be given $500 per year; and, at Butler, $700 per year, the higher amount being due to high tuition fees.

The Enos Coal Mining Company operates the largest surface mine and the largest shaft mine in the State of Indiana. Its success has been dependent on the good will of neighboring communities and, therefore, the Company offers the scholarships to express its appreciation.

KENTUCKY

Inland Steel Company at Wheelwright states that the primary objective of the Scholarship Plan is to make it possible for some unusual young men and women to have the benefits of higher education in whatever course they may select at the University of Kentucky. Two scholarships will be awarded each year and a total of eight will be in effect. The Plan is available to graduates of Floyd, Knott, and Pike Counties, in the amount of $400 per year. In the summer, an effort will be made to obtain for the students holding scholarships work in or around the mines; but the Company does not promise employment then or after graduation.

PENNSYLVANIA

Pittsburgh Coal Company offers two scholarships per year to young men in the mining areas of the Company to attain degrees in mining engineering. The scholarships pay $350 per year. Selections are made on the basis of scholastic merit, character, and general ability. Vacation employment is provided.

Imperial Coal Corporation, with operating headquarters in Johnstown, Penna., in 1949 inaugurated a program to award a scholarship of $500 per year for a four-year period to an employee or the son of an employee for study in mining engineering at The Pennsylvania State University. Later, the Plan was broadened to include Electrical and Mechanical Engineering. At present, one student has completed the course, and there are students in all four years at the University. Upon graduation, the Company hopes to provide employment, but the student is free to choose employment elsewhere.

The Philadelphia and Reading Coal and Iron Company circularizes the 35 high schools in the southern anthracite region, notifying them of the requirements of the award of the Ralph E. Taggart Memorial Scholarship in Mining Engineering. Established in 1951, the award is made for a full 4-year course in any accredited mining school. Summer vacation employment is provided, and a job with the Company will be open to the student upon successful completion of the course. Grants of $500.00 per year are made.

WEST VIRGINIA

The West Virginia Coal Association deposited $5,000 yearly with West Virginia University to provide 8 scholarships in coal mine engineering. Students were selected by the Association and the University from graduates in the high schools of the State.

A loan plan was developed by the Central West Virginia Coal Mining Institute. It provides for an annual scholarship loan of $500, to be repaid by installments of the same amount beginning 18 months after graduation and every 9 months thereafter until the whole amount is returned. No interest is charged.

Semet-Solvay Division of Allied Chemical and Dye Corporation gives a scholarship of $600 per year to a resident of West Virginia for the purpose of studying coal mining engineering in the school of Mines at West Virginia University. The winner of the award is chosen after a competitive examination based on scholarship, extra-curricular activities, and aptitude for engineering study. The Board of Governors of the University, upon recommendation of the faculty of the School of Mines and approval of the sponsoring Company, will award the scholarship.

EMPLOYMENT OF ENGINEERS IN THE COAL INDUSTRY

A course in mining engineering is excellent preparation for employment in the coal industry. In fact, the course covers a wide range and may serve as an introduction to several branches of engineering. However, the graduate may start in the engineering department of a coal mining organization and, if his talents are such that he seems best fitted for that work, he may continue in it with the expectation that satisfactory service may result in his becoming chief engineer. On the other hand, he may find that he is better adapted to work in the

SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS
Made To Withstand High Drilling Speed, Whip And Torsional Strain Of Electric Drills

Drills holes faster — Will not snap off shank or chip points — Outlasts four or five ordinary augers.
THE SALEM TOOL COMPANY SALEM, OHIO, U.S.A.

operating department, either in the mines or in the increasingly important field of coal preparation. There is also the possibility of his making progress in the use of coal either in the sales department or in an organization using coal as a fuel or as a raw material in the chemical industry.

Sometimes, one hears statements that the coal industry offers no opportunities. The facts do not confirm such an idea.

Coal mining is a resilient industry. It always snaps back after a period of stress. Consider the production record for 1900 through 1952, a period of 53 years. Using approximate figures, production in 1900 was 212 million tons; in 1952, 467 million tons; in 1916, production first exceeded 500 million tons. Including that year, production has been 500 million tons or more in 20 years, rising to a maximum of 631 million tons in 1947.

There have been 13 periods of increasing production varying in length from 2 to 7 years. In any 1 case, has there been a decline of 3 years in succession — at the time of the great depression. In 3 cases, there were declines of 2 years in succession. Therefore since there were 13 periods of increasing production in 53 years and only 4 periods of declining production, it may be said that the bituminous coal industry is resilient. In spite of its ups and downs, the ups have always been more pronounced than the downs.

There is opportunity in the coal industry. In underground mines, work at the face will undoubtedly increase in efficiency as it has for several years. The best practice is still to be reached. The first step in removing the coal from its original place is subject to improvement. Haulage in all of its elements may be speeded with due regard for safety and elimination of causes of delay. Roof control is improving but there is much to be done. Roof bolting in many cases is a long step forward, but no standards have yet been developed. Perhaps there is something ahead even better than roof bolting. Ventilation is an unsolved problem. Great progress has been made in this respect, but the time is not yet here when it may be said that ventilation is as good as it can be. Overall safety is a challenge to the young men entering industry. As long as there are fatal and serious accidents, there is much work to be done to prevent them.

Preparation of coal offers an opportunity that is getting broader as the years go by. With mechanical mining constantly increasing, the production of the mine must be separated on a large scale so that the merchantable coal goes to the market and the waste to the disposal area. Here a sharp line must be drawn. The coal must meet the requirements of the purchaser; the waste must not carry coal that can be recovered economically. Another factor that is requiring greater attention is that the waste must not be the source of air or stream pollution.

The uses of coal also provide opportunities for engineers, chemists, salesmen and others. Up to fairly recent years, coal has been thought of as a fuel primarily. It remains the most important fuel and will be available long after natural gas and petroleum are exhausted. In fact, it will someday be the source of gas and oil. Meanwhile, it is becoming a very important raw material in the chemical industry.

Human relations in industry, and especially in coal mining, offer opportunities for useful service. While the engineer during his college course has had little instruction in that subject, there is at least a trend toward the broad outlines. Like so many other subjects, the principles may be studied in college, and the practical applications learned at work. There will always be a difference of opinion between management and labor. Management to be a success, must operate the company at a profit. Labor wants the highest rates of pay it can get. Between the two positions, there is a proper place at which there must be agreement. During the period of wage negotiations, it must be expected that there will be difficulties to be solved. At all other times, let us hope that the time is coming when enlightened human relations will bring about a friendly combination of effort on the part of management and labor to promote the best interests of the industry.

CONCLUSION

The scholarship situation is remarkable in the United States as a whole. There are many scholarships available for those able to meet the requirements. The coal industry has some excellent scholarships but not yet enough to insure its own future in providing the trained men it will need.

The opportunities for useful service in the coal industry are increasingly bright for those with good training. Whether the industry is in a temporary slump or at the peak, it is and always will be essential to the welfare of this country.

W. E. Hendricks

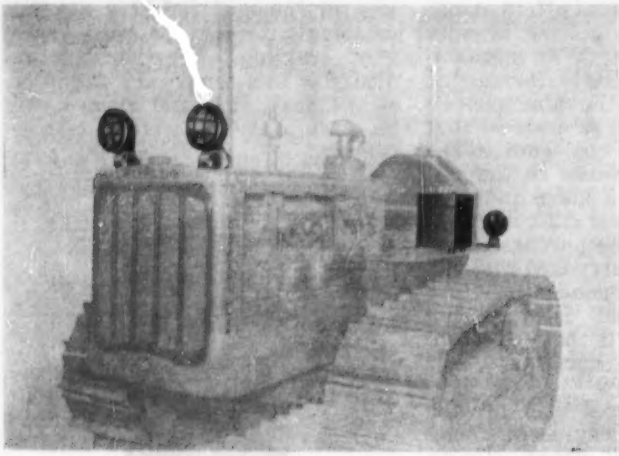
● W. E. Hendricks, who has served as Assistant to the General Sales Manager for LeTourneau-Westinghouse Company since last June, has been named Domestic Sales Manager, company officials announce.

In his new position, Hendricks succeeds H. R. Powers, who has resigned.

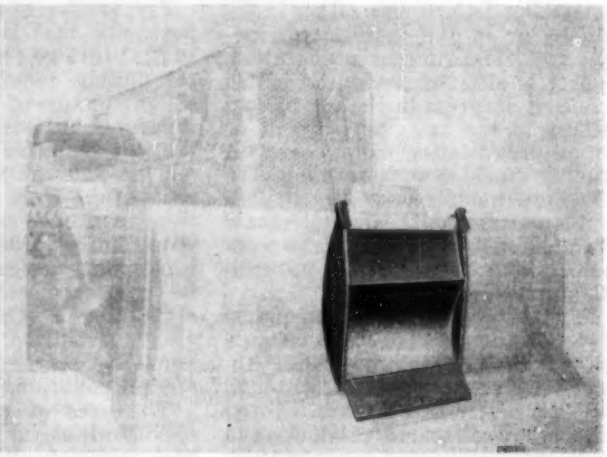
When he joined LeTourneau-Westinghouse, Hendricks was in charge of government sales. Prior to coming here, he served as Sales Manager for a LeTourneau-Westinghouse Distributor in Pittsburgh, the A. T. Green Machinery Co. Previously, he spent 11½ years with LaPlant-Choate Manufacturing Company. Starting as a Service Engineer with that Company, he advanced through the sales department to become District Representative. In 1949 he was named Assistant Sales Manager in charge of the field sales force.

His earthmoving equipment experience also includes several years with Caterpillar Tractor Co. in the merchandising and research departments.

Also announced by LeTourneau-Westinghouse is the appointment of Lloyd Rager as Sales Promotion Manager. Assistant Advertising Manager for the past four years, Rager has been with LeTourneau 17 years. In his new position, he will provide promotional and merchandising help to the LeToureau-Westinghouse Distributor organization. This will include obtaining market data and planning of product promotion programs.



Ligths on the crawler tractor permit a round-the-clock schedule. Jobs may be done faster and, where hours are precious, may mean the difference between profit and loss.

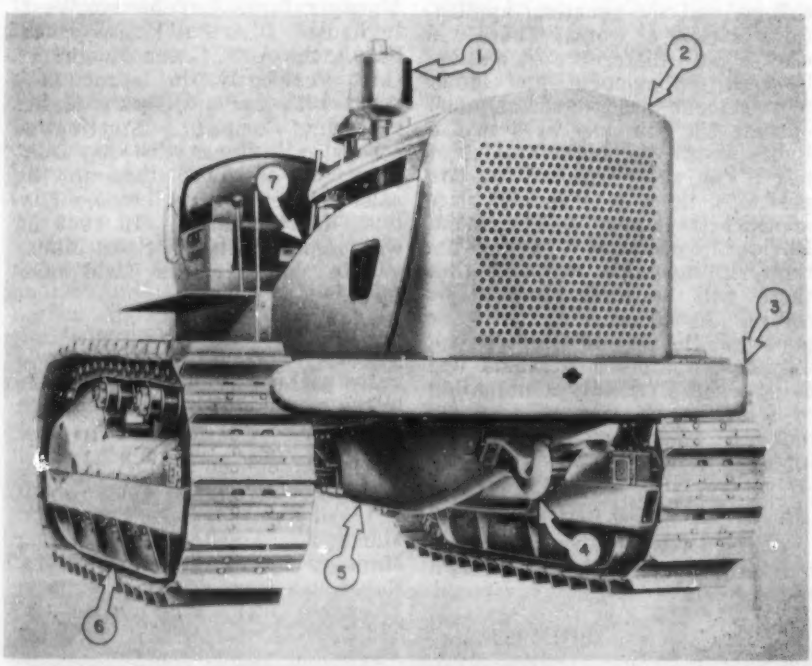


A push cup gives good in-line power application for pusher tractor. This cup does not interfere with the 'dozing characteristics of the blade and gives protection against blade damage when pushing scrapers, rippers and push loaded equipment.

NEW EQUIPMENT

The crawler tractor is not just a bulldozer or a simple prime mover, many owners have found after investigating the wide number of attachments ranging from front end pull hooks to other starting aids in an effort to make the track-type tractor more versatile and to make operation easier.

The crawler tractor is often subjected to certain strenuous jobs that may in some way endanger the machine or some part of it. Or the owner may hesitate to use his tractor on a certain job for fear of damaging it. In cases such as these, special attachments may be purchased to protect the machine and, thus, keep costly down-time due to breakage at a minimum.



Special attachments not only serve to protect the track-type tractor but also make it adaptable for more uses. On this Cat D6 are: (1) spark arrester, (2) heavy-duty radiator guard, (3) front bumper, (4) front full hook, (5) crankcase guard, (6) heavy-duty track roller guard, and (7) upper engine guard.

CAN GUARD RADIATOR

For example, a heavy-duty radiator guard is a wise precaution against tree limbs and brush on a logging operation. Or, if the tractor is operating under severe conditions, an extra heavy-duty track roller guard will protect the track rollers from damage. Rocks and stumps also prove a working hazard and a crankcase guard is low cost insurance against damage to the underpart of the engine and transmission. Various types of guards are also provided to protect the tractor engine from tree limbs or branches.

Often operations are near dry underbrush, timber, grain, oilfields or storage tanks of inflammable materials where a spark from the exhaust may prove very costly. A spark arrester has been developed that practically eliminated all danger from this source. And when operating near hospitals, school or quiet zones, a muffler can be attached that will reduce exhaust noise.

RAIN TRAP GOOD INVESTMENT

To protect the tractor engine and to prolong its life, a rain trap on the exhaust stack is a good investment. Also engine hoods and doors and radiator shutters or curtains will help control the engine temperature when the mercury hits bottom.

EASE LOAD ON AIR CLEANER

For that unusually dusty job an air cleaner pipe extension has been

developed to relieve the air cleaner of some of the load and thus provide fresher air for the tractor engine. As an extra precaution against lint, chaff or leaves, a prescreener (standard precleaner combined with a length of wire mesh) is available.

SPECIAL TRACK-SHOES NEEDED

The crawler tractor is required to travel over many types of surfaces in performing its job. Tractor manufacturers have done considerable research to provide owners with special shoes to adapt their track-type tractors to these various surfaces.

Grousers of different sizes, skeleton shoes, snow and ice shoes, street plates and rubber shoes are but a few of the many types of shoes available for special jobs. Snow sprocket wheels and different track assemblies are also available to insure the tractor's adaptability to unusual climatic conditions.

PUSH CUPS HELPFUL

Special attachments provided for construction and other jobs include push cups that give good in-line power for pusher tractors. These push cups may either be mounted to a U-frame in front of the tractor or attached directly to the dozer blade so that the tractor can be used not only as a pusher but also as a bulldozer.

A front pull hook is also available and may be used where heavy duty equipment is being towed and it is desirable to hook tractors in tandem. A front bumper may also be attached to protect the tractor radiator from heavy bumps or jolts..

AIDS FOR FARMING

In the past few decades, agriculture has undergone the throes of mechanization much like industry underwent in the latter part of the 19th century. From the old horse and plow days, farming has progressed to the present day use of highly specialized equipment.

The ability of the Diesel track-type tractor to move economically over the soil without packing it and to travel through mud and loose soils without getting stuck makes it a natural for heavy-duty farming. Track-type tractor manufacturers realize this and are endeavoring to give the farmer the types of equipment he needs and demands.

A large variety of agriculture attachments to be used with track-type tractors are now offered the farmer. Such attachments include tool bar arrangements, subsoilers, disk ridgers, cultivators, ditchers, chisels, furrowers and pivoting lister shanks. Using these attachments in conjunction with the powerful Diesel track-type tractors, the farmer can till his soil proiftably under any conditions.

Manufacturers of track-type tractors are making it possible for farmers to keep their machines busy during slack seasons through the use of special attachments, such as the following. A belt pulley drive attachment will allow a crawler tractor to do such jobs as driving a sawmill, thresher or ensilage cutter.

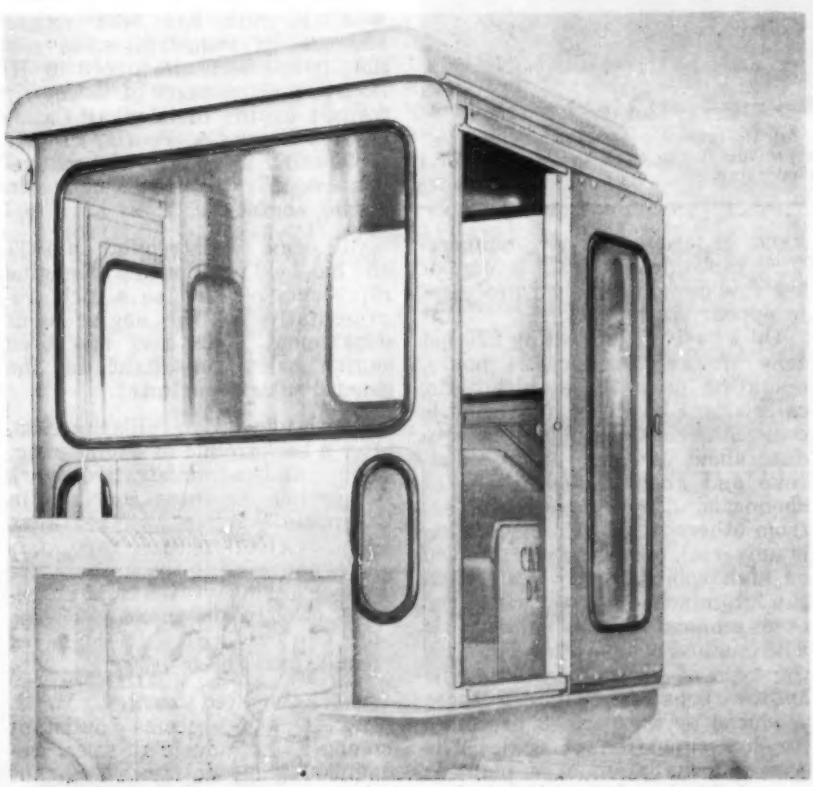
A rear power take-off may also be attached for special jobs, or the tractor owner may obtain the doubly-useful combination of both the rear power take-off and belt pulley drive. Then too, there is a front power take-off available for use in driving auxiliary equipment such as generators, pumps, and winches.

MAKE OPERATOR COMFORTABLE

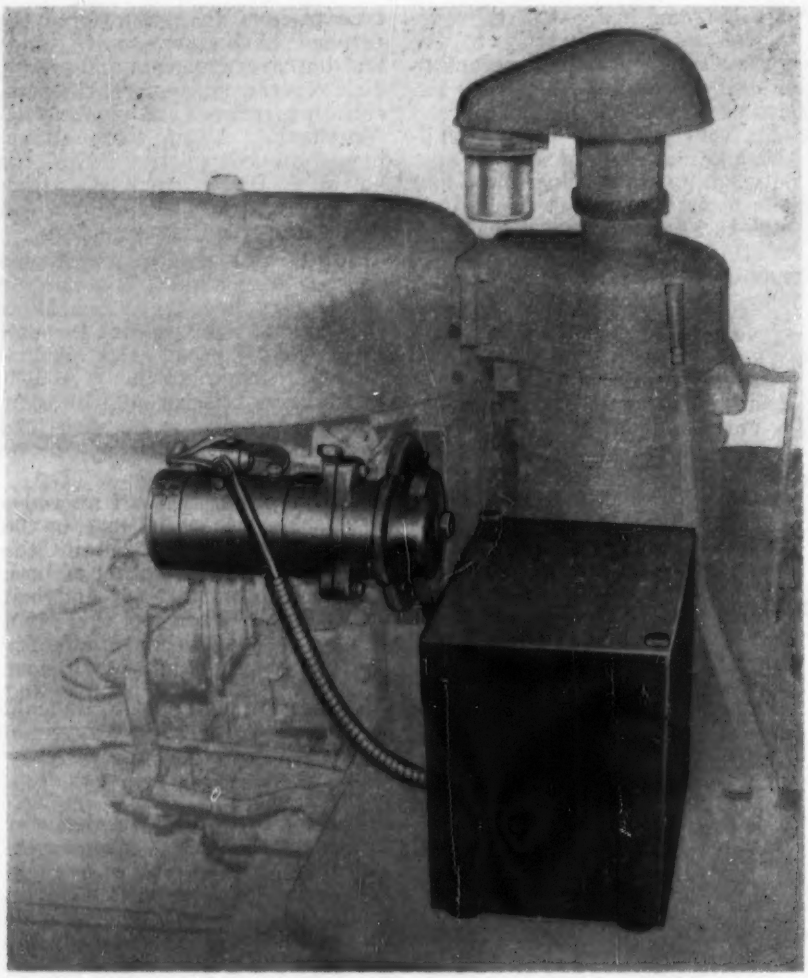
The comfort and convenience of the operator is too often overlooked in the operation of a track-type tractor. The tractor manufactures realize this and provide special attachments to remedy the situation. For convenience where a gasoline starting engine is used to start a Diesel engine, an electrical starting unit may be attached to the starting engine. Or, if it is extremely cold, an ether starting aid is designed to assist the starting of the Diesel engine.

For the comfort of the operator, cabs have been designed to keep out the blizzards, sharp winds and other discomforts of winter. A heater may be installed in the cab to keep the operator warm. To shield the operator from the sun and to provide shelter during showers or sudden downpours, a canopy top may be purchased.

Extra wide seats are available for the smaller tractors, and a special lower rear seat for tractors is offered where more head-room is needed as in orchard tillage. For orchard work also, a special orchard-type exhaust may be used to discharge exhaust gases downward below the fenders and thus keep the exhaust from striking tree limbs or fruit and damaging them. Lights, too, are available for that round-the-clock schedule that so



Cabs installed on track-type tractors provide protection against inclement weather and permit the owner to operate on a year-around basis.



An electrical starting unit is available for the gasoline starting engines on Diesel crawler tractors. Manufacturers proivde items, such as this, for the ease of the operator.

many crawler tractor owners must maintain.

Keeping in mind three basic principles—greater protection for the tractor, greater versatility of the tractor, and greater operator comfort and convenience — the track-type tractor manufacturer produces more and better attachments and thereby broadens the value of the prime mover.

● An entirely new process for the low temperature carbonization of coal has recently been announced by Franklin P. Wood Associates, Inc., of Washington, D. C.

This process, based on a four hour carbonization time, uses steam or superheated gas, and produces a free burning smokeless solid semi-coke, and also permits the recovery of the constituents of low temperature coal tar, rather than low temperature tar as commonly known. Experts with previous experience in low temperature carbonization call it one of the few economical such processes to appear since 1930.

On a basis of processing 270 net tons of raw coal per 24 hours, operating on a three shift basis, calculations based on high volatile coal show that the plant can produce about 190 net tons of semi-coke and about 9,000 gallons of chemicals. The process differs from others in that its application is universal, operating equally well on high volatile, low volatile, and sub-bituminous coals, with the exact economic results varying not with method of operation but with the type of coal processed. The hydrocarbons are similar to those produced by the various processes for hydrogenation of coal. The cost of installation of a plant is remarkably low, being slightly less than $1,000 per ton of daily input.

Basic unit of distillation is a bank of six retorts, each bank serviced by its own separately fired superheaters of various types, and operation is automatic, the valves controlled from a single remote control. The hydrocarbons are condensed in air and water cooled condensers, and separation is expected to be 95% complete.

This process is unique also in that its operation is geared to the amount of solid fuel which can be sold in a given market area for which the plant is built, with the marketing of all products being fitted into existing market structures. It thus avoids the production of any unsalable products.

J. H. Gill

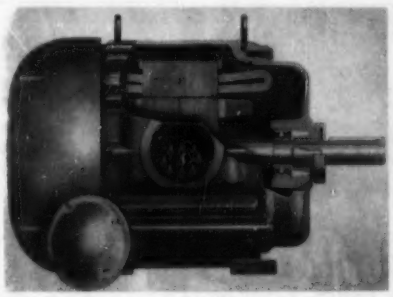
● J. H. Gill has been named manager of industrial sales section, it has been announced by H. H. Howard, manager of the newly formed engine division at Caterpillar Tractor Co., Peoria, Ill. He replaces H. W. Smith, who will relinquish this duty to become consulting engineer.

Gill came to Caterpillar in 1937 and has held positions as an engine representative and as a field representative in the engine sales department. He also has been engine sales consultant in the general sales department.

Smith joined Caterpillar in 1929, after a background of engineering, design and administrative work for various business concerns in California. After two years as assistant chief engineer for Caterpillar, he moved to the special sales division, and five years later became assistant manager of engine sales. In 1944 he became manager of industrial sales.

As announced earlier, H. J. Hunkele will become assistant manager of industrial sales, relinquishing his duties as assistant sales manager, central sales division.

● The Crocker-Wheeler Division of Elliott Company has announced a new Taconite-dustproof motor. A special modification of its CFC Sealedpower totally-enclosed, fan-cooled motor, it is of particular use in ore refining plants using the Taconite benificiation process where crushing, mixing, and drying operations produce an atmosphere burdened with fine magnetic dust. This dust is extremely injurious to windings, bearings, and other electric motor parts unless these parts are given special protection.



This modified Sealedpower motor, in addition to operation under actual field conditions, has passed exhaustive tests, including running for many hours in a sealed enclosure in which a heavy concentration of Taconite dust was constantly circulated — conditions under which any standard motor would have been completely ruined. When disassembled, absolutely no dust was found in bearings or windings. Features which make this possible are nonferrous slingers and bushings, a heavy fibrous grease seal, prelubricated and sealed ball bearings, and a long, close-tolerance fit between bearing brackets and frame. Leads are sealed in with an air-hardening plastic, and the motor is self-cleaning with its fan driven cooling air directed along the heat radiating fins and no outer casing under which dust can collect.

● Recent tests and profit figures in the use of the Canton Track Cleaner have relegated hand track cleaning to the past.

Important savings are so substantial in the use of the Canton Track Cleaner that no mine can afford to be without one. Below is a statement by a mine superintendent which speaks for itself. (Names on request.)

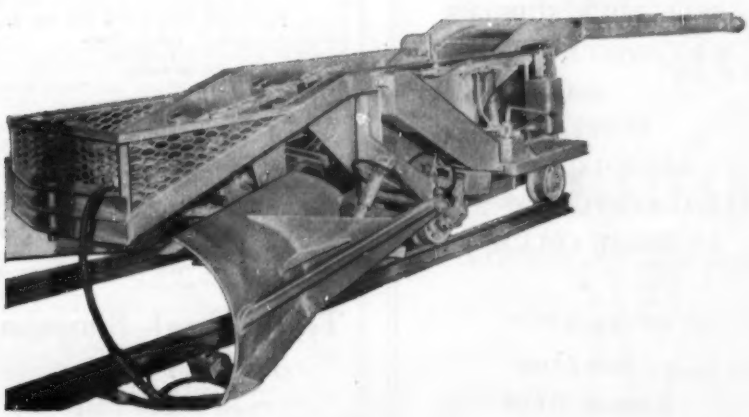
"Worked machine 5/30/53 loaded 21 cars first shift with two hours out to alter machine. Cleaned all of outside track lots of sand and wood in track. Loaded 24 cars second shift inside mine. Loaded 22 cars third shift, wet, well packed material with lots of sand. Total track cleaned 8600′. 67 cars loaded in 3 shifts, with 3-man crew.

Statement by track cleaning foreman that it would take 4 months to cover same distance with same crew by hand. Estimated labor saving of $4,200 by superintendent."

Statement on subsequent cleaning.
Track Guage 44′.0
Rail 66″
Rail height 4¼″ (1,224 sq. inches 8½ sq. st. 3 cubic ft.)
21,700 ft. track cleaned
cost $695.73
cost .13¼ per foot
Old way .89 per foot

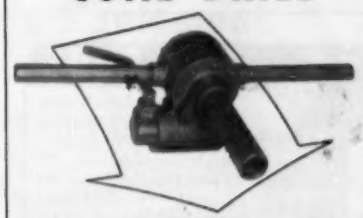
$19,233.00 saved on machine costing less than one-half the saving, in cleaning 4 miles of track.

Signed,
Superintendent



Faster, Safer DRILLING

with the
SCHROEDER
MODEL 12-B
COAL DRILL



Light-Weight! Hydraulic!

The Model 12-B Coal Drill gives you safe, dependable fast drilling with complete operational safety . . . no spark, no kick . . . all electrical hazards are removed yards from the drill. Powered from the hydraulic power systems of standard mining equipment, the Model 12-B is simple in design. It has a minimum of operating parts resulting in greatly reduced maintenance costs.

Write or call for details and demonstration.

Hydraulic Power Units are available for several non-hydraulic mining units. Wheel or skid mounted power units can also be furnished. Write or call for particulars!

Hydraulic, Electric & Pneumatic Mining Equipment

SCHROEDER BROTHERS
3116 PENN AVENUE
PITTSBURGH 1, PA.
EXPRESS 1-1571

"WE LOOK INTO THE EARTH"

CORE DRILLING

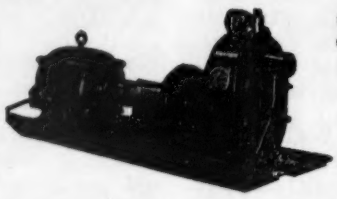
- Coal Property Testing
- Pre-Grouting Mine Shafts
- Mine Drainage Bore Holes
- Large Diameter Holes for Ventilation & Escapeways

PENNSYLVANIA DRILLING CO.
PITTSBURGH 20, PA.

INCREASE YOUR PRODUCTION
with
DALY'S IMPROVED COMBINATION MINE CHECK
The Only Satisfactory Check on the Market Today
DALY TICKET CO., Collinsville, Ill.

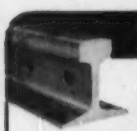
Let Us Solve your DRILLING PROBLEMS

DIAMOND CORE DRILLING
BITUMINOUS COAL LANDS
TESTED . . . SATISFACTORY
CORES GUARANTEED
HOFFMAN BROS. DRILLING CO.
Punxsutawney, Pa. Call 382



MARLOW
SELF-PRIMING
CENTRIFUGAL
GATHERING
PUMPS
Complete Line Carried in Pittsburgh Stock. Tel. HU 1-4400
HARRIS
PUMP AND SUPPLY COMPANY
Brady & Sidney Sts. Pittsburgh 3, Pa.

PROTECTIVE COATINGS
508 Grant St. S. E. GANE & CO. Pittsburgh, Pa.



NEW and RELAYING **RAILS**
Call Foster for all sizes and sections, promptly shipped from nation-wide warehouses.
Switch Material and Track Accessories properly matched and fabricated to your exact requirements.
FASTER than FOSTER
L. B. FOSTER Co.
PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
HOUSTON 2 • LOS ANGELES 5

NEW AND REBUILT
STORAGE BATTERY LOCOMOTIVES
Any Size Any Track Gauge
GREENSBURG MACHINE CO.
Greensburg Pennsylvania

FOR SALE
1-75 K W, 250-V Caterpillar Diesel, Gen. Set.
1-100 K W, 250-V Buda Diesel, Gen. Set.
1-75 KVA1220-440-V Caterpillar Diesel, Gen. Set.
MEYER BROTHERS
Phone 701 Philipsburg, Pa.

BECKWITH OFFERS BETTER BARGAINS IN USED EQUIPMENT

Caterpillar Model D8 Tractor, equipped with crankcase guard, front pull hook, LeTourneau Double Drum Cable Control and LeTourneau Angledozer. Item P-163. A real bargain at only **$3,900.00. F. O. B. Pittsburgh, Penna.**

Caterpillar D8 Tractor equipped with crankcase guard and radiator guard. Mounted with LeTourneau Model AKS Angledozer and LeTourneau Double Drum Cable Control. This tractor has had the final drives, swing frames, transmission steering and master clutches overhauled. All new rollers. A good profit-producing machine for coal stripper. Item P-115.
$6,500.00. F. O. B. Pittsburgh, Penna.

All Items subject to Prior Sale
Beckwith Machinery Company
6550 Hamilton Ave. Pittsburgh, Pa.
Phone: Pittsburgh—MOntrose 1-6900

SPEEDY STOCK-PILE LOADING AT A SAVINGS.

Oliver Model 70 Wheel Tractor with ¾ yard Wagner Hydraulic High Lift. A new clutch just installed, assures many profitable working hours. Unit formerly used for loading sand and building supplies. Don't pass up this bargain at only $1,000. f.o.b. Erie, Pa.

Subject to Prior Sale
BECKWITH MACHINERY COMPANY
6550 Hamilton Avenue
Pittsburgh 6, Penna.
PHONE: Pittsburgh MOntrose 1-6900

SELL YOUR SURPLUS EQUIPMENT and SUPPLIES THROUGH AN ADVERTISEMENT IN THESE COLUMNS

Price:
1 inch $6.00
2 inches $11.00

Chance Cone Coal Washer—190 tons per hour—sizes ¼ to 5"—operated 3 years, single shift—price open.
McNalley 75 TPH Coal Washer—sizes ½ to 4" —Plant complete with all conveyors—shaker dewatering screens, electrical equip—Alum-
Marion 362—1½ yd. shovel.
Northwest 80 D 2 yd. shovel.
Northwest Model 6—1½ yd. shovel.
Caterpillar D8 Dozer and D7 Dozer.
Air Compressor Gardner Denver 315 CFM.
Cardox Charging Plant Complete and shells.
54 B High Front—2 yd. shovel.
Joy 8 BU Loaders—5 price right.
Joy MTB 30" Belt Conveyor—40 HP.—Permissible.
Joy 11 BU Loader 250 V DC— A-1 machine.
Joy 14 BU Loaders—very good machine.
Joy E Loading Heads—PL 8 PE 250 V. DC.
Haiss 75 CC. Bucket Type Loader on Cats for Coal yard.
Slope Hoist 60 HP. with GE Controller.
Shaft Hoist 150 HP. complete controls.
W. H. 8 ton 500 V 36" go permissible loco.
Ohio Brass 15 HP. Automatic starters 600 V.
Jeffrey Permissible Distribution Box 550 V.
Jeffrey Acredyne 6' and 8' Fans.
Jeffrey 56 A Track Type Drills.
CD-4 Track Type Coal Drills.
400 New Mine Car Wheels 16" D2¼" B reduced End Axle type—Bargain.
Goodman—512 Shortwall Cutters.
Bugdustergs and Joy Cat. trucks A-1.
GE 150 KW Converters HCC-6 250 V. DC.
Champion Light Conveyor—42" x 8'
4 Large Steel Bins 70 T and 140 Tons.
25 Room Hoists—2HKL Hoists—6-32D Battery Cars.
Myers Wholey track or Cat. type Loaders and track type converted to Caterpillar.

Wanted—Hydraulic Track Type Drills or on rubber, 580 CP Preferred.

T. L. (Les) Simpson
MACHINERY AGENT
1200 Woodbourne Ave.
Pittsburgh 26, Pa.
Phone LEhigh 12254

Advertisers' Index

COAL MINING

JANUARY, 1954

Beckwith Machinery Company
Insert between Pages 4 and 5 ——— 26-27
Agency—Hosler Advertising, Inc.

Bowdil Coal Cutting Equipment ——— 4
Agency—Rex Farrall

Compton, Inc. ——— 4th Cover
Agency—McHenry-Derek Agency

Daly Ticket Company ——— 26

Euclid Road Machinery Co. ——— 28
Agency—Richard T. Brandt, Inc.

Foster Company, L. B. ——— 26
Agency—Lando Advertising Agency

Furnival Machinery Company ——— 2
Agency—Arnold Andrews

Gane & Co., S. E. ——— 26

Green, A. T. Machinery Company ——— 3
Agency—Arnold Andrews

Greensburg Machine Company ——— 26

Harris Pump & Supply Company ——— 5-26

Highway Equipment Company ——— 1st and 3rd Cover
Agency—Palm & Patterson, Inc.

Hoffman Bros. Drilling Co. ——— 26

Jeffrey Manufacturing Co. ——— 6-7
Agency—Byer & Bowman

Joy Manufacturing Co. ——— 2nd Cover
Agency—Walker & Downing

Meyer Bros. Co. ——— 26

Midwest Steel Corporation ——— 27

Moore-Flesher Hauling Company ——— 27

Ohio Machinery Co. ——— Insert between Pages 4 and 5
Agency—Hosler Advertising, Inc.

Pennsylvania Drilling Co. ——— 26

Salem Tool Company, The ——— 1-20
Agency—Meek & Thomas, Inc.

Schroeder Bros. ——— 25
Agency—McHenry-Derek Advertising

T. L. (Les) Simpson ——— 26

Stiffler Industrial Lubricating Co. ——— 5

Tranter Mfg. Company ——— 5

Walker Machinery Co. ——— Insert between Pages 4 and 5
Agency—Hosler Advertising, Inc.

West Virginia Tractor and Equipment Co. ——— 3

Wilson & Co., Geo. L. ——— 27

RELAYING RAIL
TRACK ACCESSORIES
Midwest Steel Corp.
508 Dryden St., Charleston 21, W. Va.
Telephones LD-98 or 21-121

EXCAVATOR SALESMAN

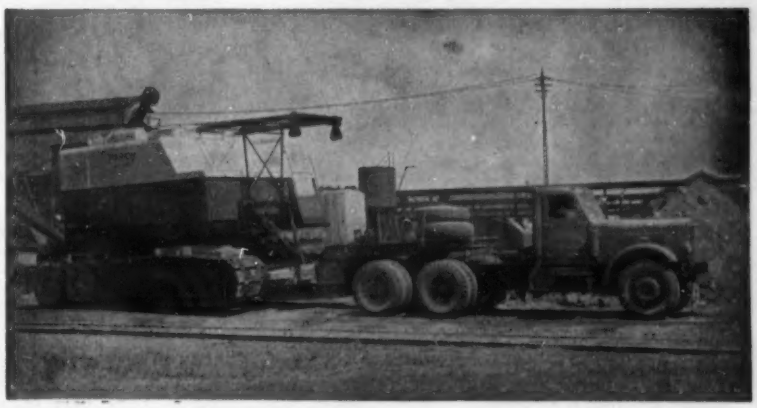
Need experienced shovel salesman to sell Bucyrus-Erie Shovels, Cranes, and Draglines in Western Pennsylvania. Right man will head up shovel sales and supervise general line salesmen as well as sell directly himself. Must be experienced in excavator sales, be alert, and a hard worker. Write resume giving business history, education, age and personal background. Enclose recent snapshot. Salary, commission and transportation furnished. Write:

H. A. Cameron, Gen. Sales Manager
BECKWITH MACHINERY COMPANY
6550 Hamilton Avenue
Pittsburgh 6, Pa.

PAGE DRAGLINE BUCKETS

Geo. L. Wilson & Co.
Office & Warehouse • 310 Mendota St. • Pittsburgh 12, Pa. • CEDAR 1-7710

MOVERS of Coal Stripping and Contractor's Equipment



HEAVY HAULING RIGGING

MOORE-FLESHER HAULING CO.

MOVERS of Coal Stripping and Contractor's Equipment

Preble & Adams Sts., North Side, Pittsburgh 33, Pa.

Phone ALlegheny 1-3600

Hard Coal or Soft Coal...

Leading Operators use "Eucs"

Built for tough off-the-highway service Rear-Dump and Bottom-Dump "Eucs" are cutting the cost of hauling overburden, coal and mine waste on scores of mining operations. Big payload capacity, fast travel speed and high job availability add up to more loads per hour and lower cost per ton or yard hauled.

Your Euclid Distributor will provide a hauling production and cost estimate for your operation . . . there's no cost or obligation so get in touch with him soon. Let him show you how "Eucs" can cut your coal hauling costs.

EUCLID DIVISION
GENERAL MOTORS CORPORATION
Cleveland 17, Ohio

In the Pennsylvania anthracite field, Wadesville Production Company has used Rear-Dump "Eucs" of 22 to 34 ton capacity to move more than 17 million cu. yds. of overburden and nearly 2 million tons of coal since operations began in June of 1948. Performance has been so satisfactory that "Eucs" are standard hauling equipment on this big operation . . . 20 units are presently in use.

Truax-Traer Coal Company has used Bottom-Dump Euclid Coal Haulers at their Illinois operation since 1935. The Euclid fleet, 14 units of 20 ton capacity and six 25 ton "Eucs", delivers an average of 8500 tons of coal to the washing plant per eight hour day. High travel speed from pit to tipple on hauls up to 3½ miles and the long service life of the Euclids help to keep hauling costs at a minimum . . . every "Euc" purchased by the company is still in service!

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

GM GENERAL MOTORS

NATALIE COAL CO.

NATALIE COAL CO., Elizabeth, speeds up stripping with **ALLIS-CHALMERS HD-20**, world's most rugged, dependable tractor.

HOFFMAN BROS.

LIMA 1201 SHOVEL offers the utmost in dependability and economical operation at HOFFMAN BROS. strip job near Karthaus.

FRANK PULFORD

Two of 4 **LIMA 1201s** used by **FRANK PULFORD** on his strip job near Punxsutawney.

Pennsylvania's most successful mines use equipment from *Highway*

• It's true . . . Pennsylvania's leading strip and deep mines employ quality shovels, tractors, compressors . . . many fine equipment items sold, serviced, guaranteed by Highway.

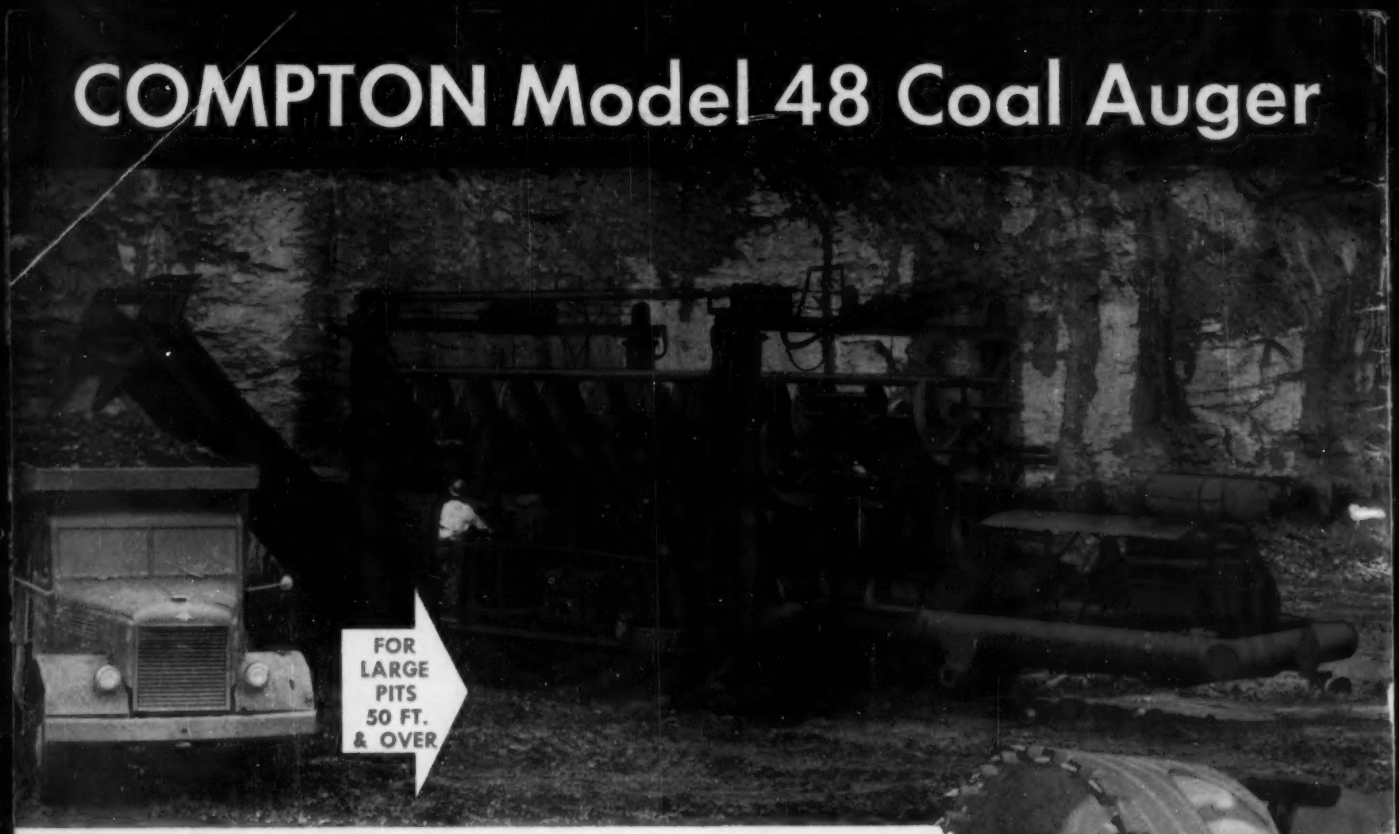
Highway distributes products built by the truly great names of the mining equipment field. By using these exclusively you assure yourself of the utmost in economical operations . . . and greatly increased profits.

Highway **EQUIPMENT COMPANY**

6465 Hamilton Ave. • Pittsburgh, Pa.

ALLIS-CHALMERS • JAEGER • BAKER • GAR WOOD • HOUGH • MASTER • THOR • LIMA SHOVELS, CRANES DRAGLINES • WAYNE CRANE • GENERAL MOTORS DIESEL ENGINES • ERIE BINS

COMPTON Model 48 Coal Auger



Recovers coal up to 208 ft. from the pit wall

. . . regardless of overburden

The Compton Model 48 Coal Auger is designed to give you maximum efficiency at low cost. CHECK THESE FEATURES!

1.—Auger sections racked on frame—ready for transfer to operating position by hydraulically controlled synchronized winches in a matter of seconds.

2.—Hydraulically-operated pilot pan eliminates spillage between machine and high wall.

3.—Entire unit is self-contained including elevating conveyor.

4.—Hydraulically-controlled swivelling discharge turret chute permits uniform trimming of trucks.

5.—Hydraulic jack legs (with self-leveling pontoons for better floatation) permit drilling up to 208 feet without misalignment . . . also permits drilling vertical overlapping holes for varying seam thickness.

COMPTON CUTTING HEAD

EXCLUSIVE WITH COMPTON AUGERS . . . BUILT-IN SPIDER ASSEMBLY ON NON-CLOGGING HEAD RESULTS IN INCREASED PRODUCTION BY DRILLING STRAIGHTER HOLES WITH LESS FRICTIONAL DRAG.

MODEL 48 SPECIFICATIONS

Length: 48 feet; Weight: Approx. 36 T.
Carries eight 26 feet auger sections.
Required pitwidth: 50 feet
Power: 300 HP Diesel Engine
Hydraulic frame jack lift: 66" or 120"
Auger diameters: 28" to 48"
Possible drilling depth: 208 feet

Consult a Compton Engineer for Details

Compton, Inc.

ORIGINATORS OF COMPTON LUMP RECOVERY HEADS

BOX 1946 — PHONE 4-6384 CLARKSBURG, WEST VIRGINIA